# Pacific Herring Coded Wire Tagging Study: 2005 Recoveries

L. Flostrand and J.F. Schweigert

Fisheries and Oceans Canada
Science Branch, Pacific Region
Pacific Biological Station
Nanaimo, British Columbia
V9T 6N7

2007

**Canadian Technical Report of Fisheries and Aquatic Sciences 2711**

Fisheries and Oceans / Pêches et Océans

Canada

**Canadian Technical Report of**
**Fisheries and Aquatic Sciences**

Technical reports contain scientific and technical information that contributes to existing knowledge but which is not normally appropriate for primary literature. Technical reports are directed primarily toward a worldwide audience and have an international distribution. No restriction is placed on subject matter and the series reflects the broad interests and policies of the Department of Fisheries and Oceans, namely, fisheries and aquatic sciences.

Technical reports may be cited as full publications. The correct citation appears above the abstract of each report. Each report is abstracted in *Aquatic Sciences and Fisheries Abstracts* and indexed in the Department's annual index to scientific and technical publications.

Numbers 1 - 456 in this series were issued as Technical Reports of the Fisheries Research Board of Canada. Numbers 457 - 714 were issued as Department of the Environment, Fisheries and Marine Service Technical Reports. The current series name was changed with report number 925.

Technical reports are produced regionally but are numbered nationally. Requests for individual reports will be filled by the issuing establishment listed on the front cover and title page. Out-of-stock reports will be supplied for a fee by commercial agents.

**Rapport technique canadien des**
**sciences halieutiques et aquatiques**

Les rapports techniques contiennent des renseignements scientifiques et techniques qui constituent une contribution aux connaissances actuelles, mais que ne sont pas normalement appropriés pour la publication dans un journal scientifique. Les rapports techniques sont destinés essentiellement à un public international et ils sont distribués à cet échelon. Il n'y a aucune restriction quant au sujet; de fait, la série reflète la vaste gamme des intérêts et des politiques du ministère des Pêches et des Océans, c'est-à-dire les scences halieutiques et aquatiques.

Les rapports techniques peuvent être cités comme des publications complètes. Le titre exact paraît au-dessus du résumé de chaque rapport. Les rapports techniques sont résumés dans la revue *Résumés des sciences aquatiques et halieutiques*, et ils sont classés dans l'index annual des publications scientifiques et techniques du Ministère.

Les numéros 1 à 456 de cette série ont été publiés à titre de rapports techniques de l'Office des recherches sur les pêcheries du Canada. Les numéros 457 à 714 sont parus à titre de rapports techniques de la Direction générale de la recherche et du développement, Service des pêches et de la mer, ministère de l'Environnement. Les numéros 715 à 924 ont été publiés à titre de rapports techniques du Service des pêches et de la mer, ministère des Pêches et de l'Environnement. Le nom actuel de la série a été établi lors de la parution du numéro 925.

Les rapports techniques sont produits à l'échelon regional, mais numérotés à l'échelon national. Les demandes de rapports seront satisfaites par l'établissement auteur dont le nom figure sur la couverture et la page du titre. Les rapports épuisés seront fournis contre rétribution par des agents commerciaux.

Canadian Technical Report of

Fisheries and Aquatic Sciences 2711

2007

# PACIFIC HERRING CODED WIRE TAGGING STUDY: 2005 RECOVERIES

by

L. Flostrand and J.F. Schweigert

Fisheries and Oceans Canada

Science Branch, Pacific Region

Pacific Biological Station,

Nanaimo, British Columbia,

V9T 6N7

© Her Majesty the Queen in Right of Canada, 2007

Cat. No. Fs 97-6/2711E ISSN 0706-6457

Correct citation for this publication:

Flostrand, L., and Schweigert, J.F. 2007. Pacific herring coded wire tagging study: 2005 recoveries. Can. Tech. Rep. Fish. Aquat. Sci. 2711: vii + 33 p.

## TABLE OF CONTENTS

Page

LIST OF TABLES ..... iv
LIST OF FIGURES ..... iv
LIST OF APPENDICES ..... v
ABSTRACT ..... vi
RÉSUMÉ ..... vii
INTRODUCTION ..... 1
METHODS ..... 2
  RECOVERING TAGS FROM 2005 ROE HERRING CATCHES ..... 2
  TAG RECOVERIES AND RECOVERY RATES ..... 2
  TAG REMOVALS AND REMOVAL RATES ..... 3
RESULTS ..... 4
  RECOVERING TAGS FROM 2005 ROE HERRING CATCHES ..... 4
  TAG RECOVERIES AND RECOVERY RATES ..... 4
  TAG REMOVALS AND REMOVAL RATES ..... 6
DISCUSSION ..... 7
ACKNOWLEDGEMENTS ..... 8
REFERENCES ..... 8
TABLES ..... 10
FIGURES ..... 22
APPENDICES ..... 23

## LIST OF TABLES


| | | Page |
|---|---|---|
| 1 | Summary of 2005 CWT recoveries by stock assessment region, fishing gear, statistical area, fish plant of recovery, catch searched for tags, total roe fishery catch, percent of total catch searched and tag release year. | 10 |
| 2 | Summary of 2005 CWT recoveries by stock assessment region, statistical area and fishing gear relative to releases. Total catch, catch tonnage searched and the percentage of catch searched are also shown. | 12 |
| 3 | Estimates of 2005 CWT recovery rates (percentage of the released tags recovered) by stock assessment region, statistical area and fishing gear. Total catch, catch tonnage searched and the percentage of catch searched are also shown. | 14 |
| 4 | Estimates of 2005 tag densities (CWTs recovered per tonne of roe herring searched) by stock assessment region, statistical area and fishing gear. Total catch, catch tonnage searched and the percentage of catch searched are also shown. | 16 |
| 5 | Estimates of 2005 CWT removals by stock assessment region, statistical area and fishing gear. Total catch, catch tonnage searched and the percentage of catch searched are also shown. | 18 |
| 6 | Estimates of 2005 CWT removal rates (percentage of the released tag removed) from all roe herring catches by stock assessment region, statistical area and fishing gear. Total catch, catch tonnage and the percentage of catch searched are also shown. | 20 |


## LIST OF FIGURES


| | | |
|---|---|---|
| 1 | The coast of British Columbia, shown divided into representative fisheries statistical (management) areas. | 22 |

## LIST OF APPENDICES


| | | Page |
|---|---|---|
| A | Summary of 1999 to 2004 herring releases with binary tag code discrepancies and subsequent 2005 tag recoveries. | 23 |
| B | Summary of herring CWT releases from 1999 to 2004 by set identification code (year and set number), stock assessment region, statistical area, location, date, code discrepancy (Disc), number of tagged herring released and subsequent 2005 tag recoveries. | 24 |
| C | Summary of herring CWT 2005 recoveries and recovery rates (RR%) by 2003 and 2004 release stock assessment region, statistical area, location, set identification (year and set number), tagging interval and number of tagged herring released per interval. | 28 |
| D | Summary of herring CWT 2004 in-season recoveries and recovery rates (RR%) by release stock assessment region, statistical area, location, set identification (year and set number), tagging interval and number of tagged herring released per interval. These data should have been included in Appendix D of Flostrand and Schweigert (2005). | 33 |

## ABSTRACT

Flostrand, L., and Schweigert, J.F. 2007. Pacific herring coded wire tagging study: 2005 recoveries. Can. Tech. Rep. Fish. Aquat. Sci. 2711: vii + 33 p.

The results of searching Pacific herring catches from British Columbia roe fisheries in 2005 to recover coded wire tags are presented. It was estimated that 27.0% of the total British Columbia roe herring catch by weight, equivalent to approximately 7,749.3 metric tonnes, was searched for tags at three fish processing plants. Among the 4 stock assessment regions which had openings for roe herring, the percentages of regional catches searched for tags varied from 22.3 to 39.2%. A total of 2,102 tagged herring from five release years were recovered. With respect to year of release, there were no recoveries from 1999; 6 recoveries from 2000; 105 from 2001; 274 from 2002; 433 from 2003 and 1,284 from 2004 and 66 inter-regional strays were observed and are described as follows. From 2001 releases, 1 was from the Straight of Georgia and recovered in the Central Coast. From 2002 releases, 2 were from the Prince Rupert District and recovered in the Central Coast; 1 was from the Prince Rupert District and recovered in the Straight of Georgia; 5 were from the Central Coast and recovered in the Straight of Georgia; 1 was from the Straight of Georgia and recovered in the Central Coast, and 1 was from the Straight of Georgia and recovered in the west coast of Vancouver Island. From 2003 releases, 5 were from the Prince Rupert District and recovered in the Central Coast; 1 was from the Prince Rupert District and recovered in the Straight of Georgia; 2 were from the Prince Rupert District and recovered in the west coast of Vancouver Island; 2 were from the Central Coast and recovered in the Prince Rupert District; 6 were from the Central Coast and recovered in the Straight of Georgia; 1 was from the Central Coast and recovered in the west coast of Vancouver Island, and 1 was from the Straight of Georgia and recovered in the Central Coast. From 2004 releases, 9 were from the Central Coast and recovered in the Prince Rupert District; 15 were from the Central Coast and recovered in the Straight of Georgia; 3 were from the Central Coast and recovered in the west coast of Vancouver Island; 1 was from the west coast of Vancouver Island and recovered in the Prince Rupert District, and 9 were from the west coast of Vancouver Island and recovered in the Straight of Georgia. In addition to regional strays, there were approximately 516 inter-area strays (with the same region of release and recovery) and there were approximately 1,514 recoveries having the same area of release and recovery. Observed tag recovery data were related to roe herring catches by region, area(s) and gear type. Using data from specific recovery and release events, we derived estimates for the number of tagged herring recovered per number released, the number of tagged herring recovered per tonne of roe herring searched, the number of tagged herring removed by the 2005 roe herring fisheries and the number of tagged herring removed per number released.

## RÉSUMÉ

Flostrand, L. et Schweigert, J.F. 2007. Pacific herring coded wire tagging study: 2005 recoveries. Can. Tech. Rep. Fish. Aquat. Sci. 2711: vii + 33 p.

Nous présentons les résultats de la recherche de harengs du Pacifique portant une micromarque codée parmi les prises de harengs rogués réalisées en Colombie-Britannique en 2005. Nous estimons que 27,0 % (en poids) des prises totales, soit quelque 7 749,3 tonnes, ont été examinées dans trois usines de transformation du poisson, pour trouver celles qui portaient une micromarque. Parmi les quatre régions côtières d'évaluation des stocks où la pêche du hareng rogué a été ouverte, le pourcentage des prises soumises à cette recherche a varié de 22,3 à 39,2 %. Au total, 2 102 harengs qui ont été marqués en saison au cours de cinq années différentes ont été récupérés (aucun de 1999; 6 de 2000; 105 de 2001; 274 de 2002; 433 de 2003 et 1 284 de 2004). Soixante-six (66) de ces poissons ont été recapturés dans une région différente de celle où ils ont été marqués. Un a été marqué et remis à l'eau en 2001 dans le détroit de Georgia puis recapturé sur la côte centrale. Des harengs marqués en 2002, deux remis à l'eau dans le district de Prince Rupert ont été recapturés sur la côte centrale; un remis à l'eau dans le district de Prince Rupert a été recapturé dans le détroit de Georgia; cinq remis à l'eau sur la côte centrale ont été recapturés dans le détroit de Georgia; un remis à l'eau dans le détroit de Georgia a été recapturé sur la côte centrale; et un remis à l'eau dans le détroit de Georgia a été recapturé sur la côte ouest de l'île de Vancouver. Des harengs marqués en 2003, cinq remis à l'eau dans le district de Prince Rupert ont été recapturés sur la côte centrale; un remis à l'eau dans le district de Prince Rupert a été recapturé dans le détroit de Georgia; deux remis à l'eau dans le district de Prince Rupert ont été recapturés sur la côte ouest de l'île de Vancouver; deux remis à l'eau sur la côte centrale ont été recapturés dans le district de Prince Rupert; six remis à l'eau sur la côte centrale ont été recapturés dans le détroit de Georgia; un remis à l'eau sur la côte centrale a été recapturé sur la côte ouest de l'île de Vancouver; et un remis à l'eau dans le détroit de Georgia a été recapturé sur la côte centrale. Des harengs marqués en 2004, neuf remis à l'eau sur la côte centrale ont été recapturés dans le district de Prince Rupert; 15 remis à l'eau sur la côte centrale ont été recapturés dans le détroit de Georgia; trois remis à l'eau sur la côte centrale ont été recapturés sur la côte ouest de l'île de Vancouver; un remis à l'eau sur la côte ouest de l'île de Vancouver a été recapturé dans le district de Prince Rupert; et neuf remis à l'eau sur la côte ouest de l'île de Vancouver ont été récupérés dans le détroit de Georgia. En plus de ces passages d'une région à l'autre, nous avons également observé environ 516 passages d'un secteur à l'autre (à l'intérieur d'une même région de marquage et de recapture). Quelque 1 514 harengs ont été recapturés au même endroit où ils avaient été remis à l'eau. Nous avons établi le rapport entre les données de harengs marqués récupérés et les prises de harengs rogués selon la région, le secteur et le type d'engin de pêche. À l'aide des données obtenues pour les marquages et les recaptures spécifiques, nous avons aussi estimé le nombre de harengs marqués récupérés par nombre remis à l'eau, le nombre de harengs marqués récupérés par tonne de harengs examinés, le nombre de harengs marqués capturés lors de la pêche de 2005 et le nombre de harengs marqués capturés par nombre remis à l'eau.

## INTRODUCTION

The application of coded wire tags (CWT) in Pacific herring began in 1999 and tag recovery from searching roe herring catches began in 2000. The primary purpose of the multi-year tagging study is to increase understanding of herring stock structure and inter-annual fidelity and dispersal to spawning sites. Characterizing spatial and temporal patterns of spawning behaviour is critical to the effective management of the resource.

Pacific Fishery Management Area Regulations of the Canadian Fisheries Act identify 30 statistical (or management) areas along the British Columbia (BC) coast, herein referred to as areas, Figure 1. These areas are used for fishery management, enforcement and catch reporting purposes. Specifically for Pacific herring management and stock assessment purposes, there are five stock assessment regions, numerous area subdivisions, and several subdivisions within each area referred to as herring sections (Midgley 2003). The five Pacific herring stock assessment regions are comprised of: 1) the Queen Charlotte Islands (QCI), south-east portions of Area 2E; 2) the Prince Rupert District (PRD), Areas 3 to 5; 3) the Central Coast (CC), Area 7 and portions of 6 to 8; 4) the Strait of Georgia (SG), Areas 14 to 19 and portions of 13 and 29, and 5) the west coast of Vancouver Island (WCVI), Areas 23 to 25. In this report, all Area 5 release sites were grouped with the PRD, all Area 6 to 9 release sites were grouped with the CC, the Area 16 release site was grouped with the SG and the Area 26 release sites were grouped with the WCVI.

Prior to 2005, CWTs were applied in the QCI (1999), the SG (1999 to 2003), the PRD (2001 to 2003), the CC (2002 to 2004), and WCVI (2004) and searching of roe herring catches for CWTs occurred in 2000 to 2004 (Flostrand and Schweigert 2002, 2003, 2004, 2005). Approximately 1,364,729 tags were released from 1999 to 2004 and approximately 3,360 inter-annual and 2,747 in-season tags were recovered from 2000 to 2004 roe herring fisheries. Herring recovered in a different region from where they were tagged are referred to as inter-regional strays (or regional strays). With respect to year of recovery, 3 regional strays were observed in 2000, 1 regional stray was observed in 2001, 4 regional strays were observed in 2002, and 41 regional strays were observed in each of 2003 and 2004. Herring recovered in the same region but from a different area from where they were tagged are referred to as inter-area strays (or area strays) but reporting to date has not elaborated on these. No herring were tagged in 2005 so this report presents results of the 2005 Pacific herring CWT recovery work only.

Weight estimates for the amounts of British Columbia caught roe herring searched for tags in previous years are as follow. In 2000, 21.3% of annual harvest was searched, equivalent to 6,222 metric tonnes (mt). In 2002, 28.8% of the annual harvest was searched, equivalent to 6,922 mt. In 2002, 31.8% of the annual harvest was searched, equivalent to 8,468 mt. In 2003, 24.9% of the

annual harvest was searched, equivalent to 7,172 mt. In 2004, 25.8% of the annual harvest was searched, equivalent to 6,135 mt. More details on the progress of the study can be found in Flostrand and Schweigert (2002, 2003, 2004, 2005).

## METHODS

### RECOVERING TAGS FROM 2005 ROE HERRING CATCHES

The equipment and methods for tag recovery were the same as for the 2000 to 2004 seasons, using R9500 CWT detectors and deflector gates along a conveyor belt (Flostrand and Schweigert, 2002 2003, 2004, 2005). The three fish plants housing the tag recovery equipment were the same as those used during the 2001 to 2004 tag recovery seasons, being Icicle Seafoods Inc. (Icicle), Canadian Fishing Company (CFC), and Bella Coola Fisheries Ltd. (BCF). In 2005, the QCI region was closed for roe herring harvests, therefore CWT recovery effort focussed on searching a representative portion of catch from the PRD, CC, SG and WCVI. As in 2003 and 2004, no seined roe herring from Alaska was searched for tags. Tag recovery equipment operated from April 4 to June 24 and J.O. Thomas and Associates were again contracted to: operate recovery units; collect and handle samples; record results of equipment operation; verify catch information related to fish lot processing records and communicate processing schedules and equipment needs with plant staff. Field personnel removed the gill tissue and rinsed each carcass of a putative tagged fish with water to remove possible sources of metal contamination prior to re-testing for the presence of a tag. This was done to reduce the number of false positive recoveries brought to the laboratory for CWT dissection. Roe herring catch records and CWT search data were compiled into a Microsoft Access database. Logbooks were kept to document equipment settings and test trials approximately every hour using seeded specimens to ensure that recovery units were in working order. Records were also kept of conveyor speeds and loading rates (mt/hour). Information pertaining to equipment operation is not presented in this report.

### TAG RECOVERIES AND RECOVERY RATES

Tag recovery observations were used to calculate tag recovery rates (%) which were determined by relating the number of tags recovered from specific fisheries to the number of tags released from defined 1999 to 2004 release events. Estimates of tag recovery densities were determined by relating the number of tag recoveries from specific fisheries to quantities of roe herring searched (mt). Recovery rates were determined by:

$$RR_o = R_o / T \qquad (1)$$

where

$RR_o$ = observed tag recovery rate;
$R_o$ = observed number of tags recovered by release year, region, and area and by recovery region, area and gear;
T = number of tags released by year, region and area.

Tag (recovery) densities were determined by:

$$RD = R_o / S \quad (2)$$

where

RD = observed tags recovered per metric tonne of roe herring searched;
S = roe herring catch searched (mt) by region, area and gear.

## TAG REMOVALS AND REMOVAL RATES

Tag removal refers to the estimate of the number of tagged herring removed from the population by roe herring fisheries. Estimates of tag removals from 2005 roe herring fisheries were determined by incorporating the proportion of each roe herring fishery's catch searched for tags into the number of recoveries observed, determined by :

$$R' = R_o (C/S) \quad (3)$$

where

R' = estimated number of tags removed;
C = total roe herring catch (mt) by region, area, and gear.

Tag removal rates were calculated by dividing tag removal estimates by the number of tags released from defined release events; thus each rate can be interpreted as a percentage of the released tags removed by each fishery. Estimates of tag removal rates were determined by:

$$RR' = R' / T = RR_o / (S/C) \quad (4)$$

where

RR' = estimated tag removal rate.

# RESULTS

## RECOVERING TAGS FROM 2005 ROE HERRING CATCHES

The total annual BC catch of roe herring in 2005, including charter vessel payment catches, was 28,730.1 mt. Roe herring fishery catches and tag recoveries by region, area, gear, and tonnages searched for tags at fish processing plants are summarized in Table 1. Fishery catch dates, areas and amounts caught (including charter payment catches) are as follows: gillnetting in the PRD occurred from March 19 to 21in Area 4 and 2,049.6 mt were caught; seining in the PRD occurred from March 18 to 20 in Area 5 and 1,750.1 mt were caught; seining in the CC occurred from March 19 to 24 in Area 7 and 3,778.4 mt were caught; gillnetting in the SG occurred from February 28 to March 5 in Area 14 and 8,953.8 mt were caught; seining in the SG occurred from February 28 to March 3 in Area 14 and 7,929.2 mt were caught; gillnetting in the WCVI occurred from March 7 to 12 in Area 25 and 896.1 mt were caught, and seining in the WCVI occurred from March 7 to 10 in Area 25 and 3,373.0 mt were caught.

An estimated 7,749.3 mt of the total BC roe herring catch was searched for CWTs, representing approximately 27.0% of the total catch. Regionally, 22.3% of PRD; 30.1% of CC; 24.2% of SG and 39.2% of WCVI catches were searched for CWTs. Search percentages by region and fishing gear were as follows: 24.3% of PRD gillnet; 19.8% of PRD seine; 30.1% of CC seine; 24.1% of SG gillnet; 24.4% of SG seine; 30.8% of WCVI gillnet and 41.5% of WCVI seine (Tables 1 to 6). From the total gillnet catch of 11,899.4 mt, approximately 24.6% was searched and from the total seine catch of 16,830.7 mt, approximately 28.6% was searched. The approximate herring tonnage searched at each of the fishing plants was 2,826 at Bella Coola, 2,775 at CFC and 3229 at Icicle.

## TAG RECOVERIES AND RECOVERY RATES

A total of 2,102 tag recoveries were obtained from the 2005 CWT search efforts. Table 1 presents all the recoveries by release year, region, gear, area and fish plant of recovery and Table 2 presents all the recoveries by release year, region, area, total tags released and by recovery region, area, gear, catch total and the amount of catch searched for tags. Appendix B lists the number of recoveries observed by tagging set and release batch size. In addition, 202 herring without tags were collected from the fish plants but were found to contain metal contamination (54 BC, 76 CFC and 72 Icicle) and 8 fish were lost prior to inspection of tag codes.

With respect to year of release, there were no recoveries from 1999; 6 recoveries from 2000; 105 from 2001; 274 from 2002; 433 from 2003 and 1,284 from 2004. All 6 of the five-year at large 2000 releases were caught in Area 14 gillnet; 5 were released in Area 14 and 1 was released in Area 17. Out of the 105

four-year at large 2001 releases, 79 were caught in the PRD; 1 was caught in the CC, and 25 were caught in the SG. There was 1 inter-regional stray from Area 14 to Area 7. From all the four-year at large recoveries, 70 were gillnetted and 35 were seined: 53 were from PRD gillnet and 26 were from PRD seine; 1 was from CC seine; 17 were from SG gillnet and 8 were from SG seine.

Out of the 274 recoveries from three-year at large 2002 releases, 172 were caught in the PRD; 60 were caught in the CC; 41 were caught in the SG, and 1 was caught in the WCVI. There were 10 inter-regional strays: 2 were Area 4 releases, of which 1 was recovered in Area 7 and 1 in Area 14; 1 was an Area 5 (Wilson Inlet) release which was recovered in Area 7; 1 was an Area 7 release which was recovered in Area 14; 4 were Area 8 releases which were recovered in Area 14; 2 were Area 14 releases, of which 1 was recovered in Area 7 and 1 was recovered in Area 25. From all the three-year at large recoveries, 162 were gillnetted and 112 were seined: 128 were from PRD gillnet and 44 were from PRD seine; 60 were from CC seine; 34 were from SG gillnet; 7 were from SG seine, and 1 was from WCVI seine.

Out of the 433 recoveries from two-year at large 2003 releases, 200 were caught in the PRD; 195 were caught in the CC; 34 were caught in the SG; 3 were caught in the WCVI, and there was 1 recovery with uncertainty in recovery source due to possible mixing of fish during processing (Table 2). There were 18 inter-regional strays: 8 were Area 5 releases, of which 5 were recovered in Area 7, 1 was recovered in Area 14 and 2 were recovered in Area 25; 4 were Area 7 releases, of which 2 were recovered in Area 5, 1 was recovered in Area 14 and 1 was recovered in Area 25; 4 were Area 8 releases which were recovered in Area 14; 1 was an Area 9 release which was recovered in Area 14, and 1 was an Area 14 release which was recovered in Area 7. From all the two-year at large recoveries with known fishery sources, 44 were gillnetted and 389 were seined: 24 were from PRD gillnet and 176 were from PRD seine; 195 were from CC seine; 20 were from SG gillnet and 14 were from SG seine, and 3 were from WCVI seine.

Out of the 1,284 recoveries from one-year at large 2004 releases, 10 were caught in the PRD; 1,019 were caught in the CC; 24 were caught in the SG; 227 were caught in the WCVI, and there were 4 recoveries with uncertainty in recovery source due to possible mixing of fish during processing (Table 2). There were 37 inter-regional strays: 6 were Area 6 releases, of which 1 was recovered in Area 4, 4 were recovered in Area 5 and 1 was recovered in Area 14; 12 were Area 7 releases, of which 4 were recovered in Area 5, 7 were recovered in Area 14 and 1 was recovered in Area 25; 5 were Area 8 releases, of which 4 were recovered in Area 14 and 1 was recovered in Area 25; 4 were Area 9 releases, of which 3 were recovered in Area 14 and 1 was recovered in Area 25; 3 were Area 23 release which were recovered in Area 14; 2 were Area 24 releases, of which 1 was recovered in Area 5 and 1 was recovered in Area 14, and 5 were Area 26 releases, which were recovered in Area 14. From all the

one-year at large recoveries with known fishery sources, 50 were gillnetted and 1,234 were seined: 1 was from PRD gillnet and 9 from PRD seine; 1,019 were from CC seine; 10 were from SG gillnet and 14 from SG seine; 39 were from WCVI gillnet and 188 from WCVI seine.

Herring CWT recovery rates with respect to release and recovery events are presented in Tables 3. Cumulative recovery rates for release events derived from all roe herring fishery sources are described below. Five-year at large recovery rates for Areas 14 and 17 releases were less than 0.01%. Four-year at large recovery rates for Areas 4 and 5 releases were 0.09 and 0.08%, respectively, and the recovery rate for Area 14 releases was approximately 0.04%. Three-year at large recovery rates for Areas 4,5-north and 5-south (Wilson Inlet) releases were 0.26; 0.16 and 0.08%, respectively; for Areas 6 to 8 releases they were 0.10; 0.12 and 0.07%, respectively, and for Area 14 releases it was 0.04%. Two-year at large recovery rates for Areas 3 and 5 releases were 0.05 and 0.21%, respectively; for Areas 7 to 9 release they were 0.22, 0.7 and 0.04%, respectively and for Areas 14 and 16 releases they were 0.03 and 0%, respectively. One-year at large recovery rates for Areas 6 to 9 release were 0.32; 0.77; 0.09 and 0.06%, respectively; from Areas 23 to 26 release they were 0.08; 0.21; 0.02 and 0.49%, respectively.

Recovery rate trends pertaining to intervals within tagging sessions of 2003 and 2004 releases are briefly summarized below (Appendix C). From 6 tagging sessions with only 2 intervals per session, a reduction in recovery rates from the first interval to the second occurred in 4 of the sessions. There were 41 sessions with 3 or more intervals and from these, 14 sessions showed no decline in recovery rates with increased interval number, 15 sessions had sequential declines in recovery rates with increased interval number and 12 sessions had non-sequential declines in rates (where the last interval's recovery rate was lower than the first but not lower than all intermediate intervals).

Results of tag recovery densities by year and area of release group and by 2005 roe herring fishery are presented in Table 4. A description of these results is not provided in the body of the report.

## TAG REMOVALS AND REMOVAL RATES

Estimates of CWT removals and removal rates by release event and by area and gear of recovery are presented in Tables 5 and 6, respectively. The estimate of the total number of tagged herring removed from the population in the 2005 roe herring fishery is 7,494. Summary estimates of removals from 2000 to 2004 releases are 25; 457; 1,118; 1,783, and 4,111, respectively Table 5. Estimates of tag removal rates by release and recovery event are given in Table 6. Five-year at large removal rates ranged from 0 to 0.01%; four-year at large removal rates ranged from 0.16 to 0.34%; three-year at large removal rates

ranged from 0.16 to 0.95%; two-year at large removal rates ranged from 0.12 to 0.81%, and one-year at large recovery rates ranged from 0.07 top 5.91%.

## DISCUSSION

The 7,749 mt of BC roe herring searched for tags in 2005 was the second highest amount of catch searched in a given year following 2002; furthermore, there was substantial coverage of each fishery (19.8 to 41.5%) with respect to region and fishing gear. The 2,102 inter-annual recoveries greatly exceeded observations from previous recovery years and the 1,284 one-year at large recoveries in 2005 was more than double those from 2004 (628). Although the number of 2004 releases (357,346) exceeded those in 2003 (328,423), the larger number of one-year at large recoveries observed in 2005 was probably largely due to greater search coverage, especially in statistical areas near to where tagging occurred in previous years. The 66 inter-regional strays recovered in 2005 exceeded the number of stays observed in previous years and comprised 3% of all 2005 recoveries. This percentage of strays is similar to what the 2003 and 2004 inter-annual recoveries showed.

Approximately 38% of all roe herring searched was gillnetted, which accounted for 6% of the one and two-year at large recoveries combined and 68% of the three-year and longer recoveries combined. However, one should also take into account the numbers of releases and geographic proximity of release events when considering gear effects on recoveries. In looking at PRD recoveries, a direct comparison between Area 4 and Area 5 recovery rates and tag densities can't be made because results are confounded by gear and location effects. Overall tag densities for three-year at large and longer SG recoveries were greater in the gillnet catch than the seine catch. The same cannot be said for the WCVI fisheries because only 1 recovery was observed and it was seined. Tag recovery densities for one and two-year at large SG and WCVI recoveries were quite similar for gillnet and seine fisheries.

One observation worth elaborating on is the low number of recoveries from Area 25 2004 releases recovered in Area 25. In this area, tagging occurred during the tail end of the gillnet fishery after considerable spawning had been observed. Field notes indicated that many of the fish caught in the tagging sets looked spawned out. Representative biological samples from these sets showed that 60 to75% of the fish had spawned, compared to results from the biological samples from Areas 23, 24 and 26, which showed that 4, 0 and 2% of the fish had spawned.

As in 2004, tag interval recovery rates within tagging sessions showed some declines from increasing tagging session duration thus providing some insight into the variability of tagging induced mortality, which may be confounded

with differential natural mortality, migration, age composition, recruitment and gear selectivity.

Future herring tagging efforts are not being planned and 2006 is expected to be the last year for CWT recovery from roe herring fisheries. Future work with the Pacific herring tagging study will focus on analysis of results and model development.

## ACKNOWLEDGEMENTS

The Herring Conservation and Research Society in conjunction with DFO provided funding for this work. Doug Herriott (Salmon Head Recovery Program, DFO) assisted with inventorying and proof reading supplies of CWTs. Fish plant staff at Canadian Fishing Company Ltd., Icicle Seafoods Inc. and Bella Coola Fisheries Ltd. were again extremely cooperative in accommodating the recovery units and providing herring roe processing reports. Doug Tallman of J.O Thomas and Associates provided logistical support for recovery operations and supervised the field staff, who diligently collected and managed recovered samples.

## REFERENCES

Flostrand, L., and Schweigert, J.F. 2002. Pacific herring coded wire tagging study: releases and recoveries, 1999 – 2001. Can. Tech. Rep. Fish. Aquat. Sci. 2428: 34 p.

Flostrand, L., and Schweigert, J.F. 2003. Pacific herring coded wire tagging study: 2002 releases and recoveries. Can. Tech. Rep. Fish. Aquat. Sci. 2483: 38 p.

Flostrand, L. and Schweigert, J.F. 2004. Pacific herring coded wire tagging study: 2003 releases and recoveries. Can. Tech. Rep. Fish. Aquat. Sci. 2534: 57 p.

Flostrand, L. and Schweigert, J.F. 2005. Pacific herring coded wire tagging study: 2004 releases and recoveries. Can. Tech. Rep. Fish. Aquat. Sci. 2579: 39 p.

Midgley, P. 2003. Definitions and codings of localities, herring sections and stock assessment regions for British Columbia herring data. Can. Manuscr. Rep. Fish. Aquat. Sci. 2634: 113 p.

Left Blank on Purpose

Table 1. Summary of 2005 CWT recoveries by stock assessment region, fishing gear, statistical area, fish plant of recovery, catch searched for tags, total roe fishery catch, percent of total catch searched and tag release year.

| Region | Gear | Area | Fish Plant | Catch (mt) Searched | Total Catch (mt) | % Catch Searched | CWT Recoveries by Release Year 2000 | 2001 | 2002 | 2003 | 2004 | All |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PRD | GN | 4 | BCF | 215.0 | - | - | - | 28 | 49 | 12 | 1 | 90 |
| | | | CFC | 0.0 | - | - | - | - | - | - | - | - |
| | | | Icicle | 284.0 | - | - | - | 25 | 79 | 12 | - | 116 |
| | | | All | 499.0 | 2,049.6 | 24.3 | - | 53 | 128 | 24 | 1 | 206 |
| | SN | 5 | BCF | 49.0 | - | - | - | 4 | 6 | 24 | 3 | 37 |
| | | | CFC | 174.2 | - | - | - | 12 | 20 | 93 | 4 | 129 |
| | | | Icicle | 123.4 | - | - | - | 10 | 18 | 59 | 2 | 89 |
| | | | All | 346.6 | 1,750.1 | 19.8 | - | 26 | 44 | 176 | 9 | 255 |
| | Both | 4, 5 | All | 845.5 | 3,799.7 | 22.3 | | 79 | 172 | 200 | 10 | 461 |
| CC | SN | 7 | BCF | 322.1 | - | - | - | - | 25 | 42 | 239 | 306 |
| | | | CFC | 616.9 | - | - | - | 1 | 28 | 107 | 583 | 719 |
| | | | Icicle | 197.8 | - | - | - | - | 7 | 46 | 197 | 250 |
| | | | All | 1,136.7 | 3,778.4 | 30.1 | - | 1 | 60 | 195 | 1,019 | 1,275 |
| SG | GN | 14 | BCF | 696.7 | - | - | 3 | 6 | 7 | 4 | 1 | 21 |
| | | | CFC | 763.9 | - | - | 2 | 9 | 17 | 9 | 2 | 39 |
| | | | Icicle | 695.8 | - | - | 1 | 2 | 10 | 7 | 7 | 27 |
| | | | All | 2,156.4 | 8,953.8 | 24.1 | 6 | 17 | 34 | 20 | 10 | 87 |
| | SN | 14 | BCF | 528.9 | - | - | - | 2 | - | 4 | 3 | 9 |
| | | | CFC | 748.4 | - | - | - | 5 | 6 | 5 | 5 | 21 |
| | | | Icicle | 658.6 | - | - | - | 1 | 1 | 5 | 6 | 13 |
| | | | All | 1,936.0 | 7,929.2 | 24.4 | - | 8 | 7 | 14 | 14 | 43 |
| | Both | 14 | All | 4,092.4 | 16,883.0 | 24.2 | 6 | 25 | 41 | 34 | 24 | 130 |

Table 1 (continued).

| Region | Gear | Area | Fish Plant | Catch (mt) Searched | Total Catch (mt) | % Catch Searched | CWT Recoveries by Release Year 2000 | 2001 | 2002 | 2003 | 2004 | All |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WCVI | GN | 25 | BCF | 275.8 | - | - | - | - | - | - | 39 | 39 |
| | | | CFC | 0.0 | - | - | - | - | - | - | - | - |
| | | | Icicle | 0.0 | - | - | - | - | - | - | - | - |
| | | | All | 275.8 | 896.1 | 30.8 | - | - | - | - | 39 | 39 |
| | SN | 25 | BCF | 738.5 | - | - | - | - | - | - | 85 | 85 |
| | | | CFC | 471.7 | - | - | - | - | 1 | 3 | 74 | 78 |
| | | | Icicle | 188.7 | - | - | - | - | - | - | 29 | 29 |
| | | | All | 1,398.9 | 3,373.0 | 41.5 | - | - | 1 | 3 | 188 | 192 |
| | Both | 25 | All | 1,674.7 | 4,269.1 | 39.2 | 0 | 0 | 1 | 3 | 227 | 231 |
| UNK | SN | 5, 7 | Icicle | - | - | - | - | - | - | - | 1 | 1 |
| | SN | 7, 14 | CFC | - | - | - | - | - | - | - | 1 | 1 |
| | SN | 7, 25 | CFC | - | - | - | - | - | - | 1 | - | 1 |
| | SN | 7, 25 | Icicle | - | - | - | - | - | - | - | 1 | 1 |
| | SN | 14, 25 | BCF | - | - | - | - | - | - | - | 1 | 1 |
| By plant | Both | | BCF | 2,825.9 | - | - | 3 | 40 | 87 | 86 | 372 | 588 |
| | | | CFC | 2,775.1 | - | - | 2 | 27 | 72 | 218 | 669 | 988 |
| | | | Icicle | 2,148.2 | - | - | 1 | 38 | 115 | 129 | 243 | 526 |
| BC | GN | All | All | 2,931.2 | 11,899.4 | 24.6 | 6 | 70 | 162 | 44 | 50 | 332 |
| | SN | All | All | 4,818.1 | 16,830.7 | 28.6 | - | 35 | 112 | 389 | 1,234 | 1,770 |
| | Both | All | All | 7,749.3 | 28,730.1 | 27.0 | 6 | 105 | 274 | 433 | 1,284 | 2,102 |

UNK refers to unknown fishery for tag recovery due to possible mixing in fish processing between catches from 2 different seine fisheries.

Table 2. Summary of 2005 CWT recoveries by assessment region, statistical area and fishing gear relative to releases. Total catch, catch tonnage searched and the percentage of catch searched are also shown.

| **Recovery** | Region | | | PRD | PRD | CC | SG | SG | WCVI | WCVI | Unk | Unk | Unk | Unk | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area | | | 4 | 5 | 7 | 14 | 14 | 25 | 25 | 5,7 | 7,25 | 7,14 | 14,25 | |
| | Gear | | | GN | SN | SN | GN | SN | GN | SN | SN | SN | SN | SN | |
| | Total Catch (mt) | | | 2,049.6 | 1,750.1 | 3,778.4 | 8,953.8 | 7,929.2 | 896.1 | 3,373.0 | | | | | 28,730.1 |
| | Catch Searched (mt) | | | 499.0 | 346.5 | 1,136.7 | 2,156.4 | 1,936.0 | 275.8 | 1,398.9 | | | | | 7,749.0 |
| | Catch Searched (%) | | | 24.3 | 19.8 | 30.1 | 24.1 | 24.4 | 30.8 | 41.5 | | | | | 27.0 |
| **Release** Year | Region | Area | Tags Released | | | | | | | | | | | | |
| 1999 | QCI | 2E | 6,175 | - | - | - | - | - | - | - | - | - | - | - | - |
| | SG | 14 | 23,187 | - | - | - | - | - | - | - | - | - | - | - | - |
| | SG | 17 | 14,266 | - | - | - | - | - | - | - | - | - | - | - | - |
| WYD | SG | 14, 17 | 5,815 | - | - | - | - | - | - | - | - | - | - | - | - |
| BYD | SG | 14, 17 | 7,141 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2000 | SG | 14 | 180,229 | - | - | - | 5 | - | - | - | - | - | - | - | 5 |
| | SG | 17 | 58,994 | - | - | - | 1 | - | - | - | - | - | - | - | 1 |
| WYD | SG | 14, 17 | 6,471 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2001 | PRD | 4 | 65,809 | 49 | 12 | - | - | - | - | - | - | - | - | - | 61 |
| | PRD | 5 | 22,387 | 4 | 14 | - | - | - | - | - | - | - | - | - | 18 |
| | SG | 14 | 60,558 | - | - | 1 | 17 | 8 | - | - | - | - | - | - | 26 |
| 2002 | PRD | 4 | 48,960 | 119 | 5 | 1 | 1 | - | - | - | - | - | - | - | 126 |
| | PRD | 5 | 25,701 | 7 | 33 | - | - | - | - | - | - | - | - | - | 40 |
| | PRD | 5WI | 11,081 | 2 | 6 | 1 | - | - | - | - | - | - | - | - | 9 |
| | CC | 6 | 18,168 | - | - | 19 | - | - | - | - | - | - | - | - | 19 |
| | CC | 7 | 31,027 | - | - | 35 | - | 1 | - | - | - | - | - | - | 36 |
| | CC | 8 | 9,463 | - | - | 3 | 1 | 3 | | | - | - | - | - | 7 |
| | SG | 14 | 83,528 | - | - | 1 | 32 | 3 | - | 1 | - | - | - | - | 37 |

Table 2 (continued).

| Recovery | Region | | | PRD | PRD | CC | SG | SG | WCVI | WCVI | Unk | Unk | Unk | Unk | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area | | | 4 | 5 | 7 | 14 | 14 | 25 | 25 | 5,7 | 7,25 | 14,7 | 14,25 | |
| | Gear | | | GN | SN | SN | GN | SN | GN | SN | SN | SN | SN | SN | |
| | Total Catch (mt) | | | 2,049.6 | 1,750.1 | 3,778.4 | 8,953.8 | 7,929.2 | 896.1 | 3,373.0 | | | | | 28,730.1 |
| | Catch Searched (mt) | | | 499.0 | 346.5 | 1,136.7 | 2,156.4 | 1,936.0 | 275.8 | 1,398 | | | | | 7,749.0 |
| | Catch Searched (%) | | | 24.3 | 19.8 | 30.1 | 24.1 | 24.4 | 30.8 | 41.5 | | | | | 27.0 |
| **Release** Year | Region | Area | Tags Released | | | | | | | | | | | | |
| 2003 | PRD | 3* | 15,066 | 5 | 2 | - | - | - | - | - | - | - | - | - | 7 |
| | PRD | 5 | 96,434 | 19 | 172 | 5 | 1 | - | - | 2 | - | - | - | - | 199 |
| | CC | 7 | 79,920 | - | 2 | 170 | 1 | - | - | 1 | - | 1 | - | - | 175 |
| | CC | 8 | 27,453 | - | - | 15 | 1 | 3 | - | - | - | - | - | - | 19 |
| | CC | 9 | 13,660 | - | - | 4 | - | 1 | - | - | - | - | - | - | 5 |
| | SG | 14 | 89,247 | - | - | 1 | 17 | 10 | - | - | - | - | - | - | 28 |
| | SG | 16 | 6,643 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2004 | CC | 6 | 52,049 | 1 | 4 | 160 | - | 1 | - | - | - | - | - | - | 166 |
| | CC | 7 | 107,843 | - | 4 | 817 | 2 | 5 | - | 1 | 1 | - | - | - | 830 |
| | CC | 8 | 44,614 | - | - | 37 | 1 | 3 | - | 1 | - | - | - | - | 42 |
| | CC | 9 | 17,770 | - | - | 4 | 1 | 2 | - | 1 | - | - | 1 | 1 | 10 |
| | WCVI | 23 | 33,608 | - | - | - | 1 | 2 | 5 | 17 | - | 1 | - | - | 26 |
| | WCVI | 24 | 32,421 | - | 1 | - | 1 | - | 11 | 56 | - | - | - | - | 69 |
| | WCVI | 25 | 38,601 | - | - | - | - | - | 3 | 4 | - | - | - | - | 7 |
| | WCVI | 26 | 27,181 | - | - | - | 4 | 1 | 20 | 108 | - | - | - | - | 133 |
| WYD | WCVI, CC | 8, 25 | 3,259 | - | - | 1 | - | - | - | - | - | - | - | - | 1 |
| All | All | | 1,364,729 | 206 | 255 | 1,275 | 87 | 43 | 39 | 192 | 1 | 2 | 1 | 1 | 2,102 |

Unk refers to unknown fishery for tag recovery due to possible mixing in fish processing between catches from 2 different seine fisheries.
WI refers to Wilson Inlet release event (southern PRD). * Correction from Tables 2 to 6 in Flostrand and Schweigert (2004, 2005) where it was printed as Area 4 but the release event was in fact in Area 3 (although almost exactly on the border of the two Areas).

Table 3. Estimates of 2005 CWT recovery rates (percentage of the released tags recovered) by assessment region, statistical area and fishing gear. Total catch, catch tonnage searched and the percentage of catch searched are also shown.

| Recovery | Region | | | PRD | PRD | CC | SG | SG | WCVI | WCVI | Unk | Unk | Unk | Unk | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area | | | 4 | 5 | 7 | 14 | 14 | 25 | 25 | 5,7 | 7,25 | 7,14 | 14,25 | |
| | Gear | | | GN | SN | SN | GN | SN | GN | SN | SN | SN | SN | SN | |
| | Total Catch (mt) | | | 2,049.6 | 1,750.1 | 3,778.4 | 8,953.8 | 7,929.2 | 896.1 | 3,373.0 | - | - | - | - | 28,730.1 |
| | Catch Searched (mt) | | | 499.0 | 346.5 | 1,136.7 | 2,156.4 | 1,936.0 | 275.8 | 1,398.9 | - | - | - | - | 7,749.0 |
| | Catch Searched (%) | | | 24.3 | 19.8 | 30.1 | 24.1 | 24.4 | 30.8 | 41.5 | - | - | - | - | 27.0 |
| **Release Year** | Region | Area | Tags Released | | | | | | | | | | | | |
| 1999 | QCI | 2E | 6,175 | - | - | - | - | - | - | - | - | - | - | - | - |
| | SG | 14 | 23,187 | - | - | - | - | - | - | - | - | - | - | - | - |
| | SG | 17 | 14,266 | - | - | - | - | - | - | - | - | - | - | - | - |
| WYD | SG | 14, 17 | 5,815 | - | - | - | - | - | - | - | - | - | - | - | - |
| BYD | SG | 14, 17 | 7,141 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2000 | SG | 14 | 180,229 | - | - | - | <0.01 | - | - | - | - | - | - | - | <0.01 |
| | SG | 17 | 58,994 | - | - | - | <0.01 | - | - | - | - | - | - | - | <0.01 |
| WYD | SG | 14, 17 | 6,471 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2001 | PRD | 4 | 65,809 | 0.07 | 0.02 | - | - | - | - | - | - | - | - | - | 0.09 |
| | PRD | 5 | 22,387 | 0.02 | 0.06 | - | - | - | - | - | - | - | - | - | 0.08 |
| | SG | 14 | 60,558 | - | - | <0.01 | 0.03 | 0.01 | - | - | - | - | - | - | 0.04 |
| 2002 | PRD | 4 | 48,960 | 0.24 | 0.01 | <0.01 | <0.01 | - | - | - | - | - | - | - | 0.26 |
| | PRD | 5 | 25,701 | 0.03 | 0.13 | - | - | - | - | - | - | - | - | - | 0.16 |
| | PRD | 5WI | 11,081 | 0.02 | 0.05 | 0.01 | - | - | - | - | - | - | - | - | 0.08 |
| | CC | 6 | 18,168 | - | - | 0.10 | - | - | - | - | - | - | - | - | 0.10 |
| | CC | 7 | 31,027 | - | - | 0.11 | - | <0.01 | - | - | - | - | - | - | 0.12 |
| | CC | 8 | 9,463 | - | - | 0.03 | 0.01 | 0.03 | - | - | - | - | - | - | 0.07 |
| | SG | 14 | 83,528 | - | - | <0.01 | 0.04 | <0.01 | - | <0.01 | - | - | - | - | 0.04 |

Table 3 (continued).

| Recovery | Region | | | PRD | PRD | CC | SG | SG | WCVI | WCVI | Unk | Unk | Unk | Unk | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area | | | 4 | 5 | 7 | 14 | 14 | 25 | 25 | 5,7 | 7,25 | 14,7 | 14,25 | |
| | Gear | | | GN | SN | SN | GN | SN | GN | SN | SN | SN | SN | SN | |
| | Total Catch (mt) | | | 2,049.6 | 1,750.1 | 3,778.4 | 8,953.8 | 7,929.2 | 896.1 | 3,373.0 | - | - | - | - | 28,730.1 |
| | Catch Searched (mt) | | | 499.0 | 346.5 | 1,136.7 | 2,156.4 | 1,936.0 | 275.8 | 1,398.9 | | - | - | - | 7,749.0 |
| | Catch Searched (%) | | | 24.3 | 19.8 | 30.1 | 24.1 | 24.4 | 30.8 | 41.5 | - | - | - | - | 27.0 |
| **Release** Year | Region | Area | Tags Released | | | | | | | | | | | | |
| 2003 | PRD | 3 | 15,066 | 0.03 | 0.01 | - | - | - | - | - | - | - | - | - | 0.05 |
| | PRD | 5 | 96,434 | 0.02 | 0.18 | 0.01 | <0.01 | - | - | <0.01 | - | - | - | - | 0.21 |
| | CC | 7 | 79,920 | - | <0.01 | 0.21 | <0.01 | - | - | <0.01 | - | <0.01- | - | - | 0.22 |
| | CC | 8 | 27,453 | - | - | 0.05 | <0.01 | 0.01 | - | - | - | - | - | - | 0.07 |
| | CC | 9 | 13,660 | - | - | 0.03 | - | 0.01 | - | - | - | - | - | - | 0.04 |
| | SG | 14 | 89,247 | - | - | <0.01 | 0.02 | 0.01 | - | - | - | - | - | - | 0.03 |
| | SG | 16 | 6,643 | - | - | - | - | - | - | - | - | - | - | - | - |
| 2004 | CC | 6 | 52,049 | <0.01 | 0.01 | 0.31 | - | <0.01 | - | - | - | - | - | - | 0.32 |
| | CC | 7 | 107,843 | - | <0.01 | 0.76 | <0.01 | <0.01 | - | <0.01 | <0.01 | - | - | - | 0.77 |
| | CC | 8 | 44,614 | - | - | 0.08 | <0.01 | 0.01 | - | <0.01 | - | - | - | - | 0.09 |
| | CC | 9 | 17,770 | - | - | 0.02 | 0.01 | 0.01 | - | 0.01 | - | - | 0.01 | 0.01 | 0.06 |
| | WCVI | 23 | 33,608 | - | - | - | <0.01 | 0.01 | 0.01 | 0.05 | - | <0.01 | - | - | 0.08 |
| | WCVI | 24 | 32,421 | - | <0.01 | - | <0.01 | - | 0.03 | 0.17 | - | - | - | - | 0.21 |
| | WCVI | 25 | 38,601 | - | - | - | - | - | 0.01 | 0.01 | - | - | - | - | 0.02 |
| | WCVI | 26 | 27,181 | - | - | - | 0.01 | <0.01 | 0.07 | 0.40 | - | - | - | - | 0.49 |
| WYD | WCVI, CC | 8, 25 | 3,259 | - | - | 0.03 | - | - | - | - | - | - | - | - | 0.03 |

Unk refers to unknown fishery for tag recovery due to possible mixing in fish processing between catches from 2 different seine fisheries.
WI refers to Wilson Inlet release event (southern PRD).

Table 4. Estimates of 2005 tag densities (CWTs recovered per tonne of roe herring searched) by assessment region, statistical area and fishing gear. Total catch tonnage searched and the percentage of catch searched are also shown.

| **Recovery** | Region | | PRD | PRD | CC | SG | SG | WCVI | WCVI | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | | 4 | 5 | 7 | 14 | 14 | 25 | 25 | |
| | Gear | | GN | SN | SN | GN | SN | GN | SN | |
| | Total Catch (mt) | | 2,049.6 | 1,750.1 | 3,778.4 | 8,953.8 | 7,929.2 | 896.1 | 3,373.0 | 28,730.1 |
| | Catch Searched (mt) | | 499.0 | 346.5 | 1,136.7 | 2,156.4 | 1,936 | 2,75.8 | 1,398.9 | 7,749.0 |
| | Catch Searched (%) | | 24.3 | 19.8 | 30.1 | 24.1 | 24.4 | 30.8 | 41.5 | 27.0 |
| **Release** Year | Region | Area | Tags Released | | | | | | | |
| 1999 | QCI | 2E | 6,175 | - | - | - | - | - | - | - |
| | SG | 14 | 23,187 | - | - | - | - | - | - | - |
| | SG | 17 | 14,266 | - | - | - | - | - | - | - |
| WYD | SG | 14, 17 | 5,815 | - | - | - | - | - | - | - |
| BYD | SG | 14, 17 | 7,141 | - | - | - | - | - | - | - |
| 2000 | SG | 14 | 180,229 | - | - | - | 0.002 | - | - | 0.001 |
| | SG | 17 | 58,994 | - | - | - | <0.001 | - | - | <0.001 |
| WYD | SG | 14, 17 | 6,471 | - | - | - | - | - | - | <0.001 |
| 2001 | PRD | 4 | 65,809 | 0.098 | 0.035 | - | - | - | - | 0.008 |
| | PRD | 5 | 22,387 | 0.008 | 0.040 | - | - | - | - | 0.002 |
| | SG | 14 | 60,558 | - | - | 0.001 | 0.008 | 0.004 | - | 0.003 |
| 2002 | PRD | 4 | 48,960 | 0.238 | 0.014 | 0.001 | <0.001 | - | - | 0.016 |
| | PRD | 5 | 25,701 | 0.014 | 0.095 | - | - | - | - | 0.005 |
| | PRD | 5WI | 11,081 | 0.004 | 0.017 | 0.001 | - | - | - | 0.001 |
| | CC | 6 | 18,168 | - | - | 0.017 | - | - | - | 0.002 |
| | CC | 7 | 31,027 | - | - | 0.031 | - | 0.001 | - | 0.005 |
| | CC | 8 | 9,463 | - | - | 0.003 | <0.001 | 0.002 | - | 0.001 |
| | SG | 14 | 83,528 | - | - | 0.001 | 0.015 | 0.002 | - | 0.001 | 0.005 |

Table 4 (continued).

| Recovery | Region | | | PRD | PRD | CC | SG | SG | WCVI | WCVI | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area | | | 4 | 5 | 7 | 14 | 14 | 25 | 25 | |
| | Gear | | | GN | SN | SN | GN | SN | GN | SN | |
| | Total Catch (mt) | | | 2,049.6 | 1,750.1 | 3,778.4 | 8,953.8 | 7,929.2 | 896.1 | 3,373.0 | 28,730.1 |
| | Catch Searched (mt) | | | 499 | 346.5 | 1,136.7 | 2,156.4 | 1,936 | 2,75.8 | 1,398.9 | 7,749.0 |
| | Catch Searched (%) | | | 24.3 | 19.8 | 30.1 | 24.1 | 24.4 | 30.8 | 41.5 | 27.0 |
| **Release** Year | Region | Area | Tags Released | | | | | | | | |
| 2003 | PRD | 3 | 15,066 | 0.010 | 0.006 | - | - | - | - | - | 0.001 |
| | PRD | 5 | 96,434 | 0.038 | 0.496 | 0.004 | <0.001 | - | - | 0.001 | 0.026 |
| | CC | 7 | 79,920 | - | 0.006 | 0.15 | <0.001 | - | - | 0.001 | 0.023 |
| | CC | 8 | 27,453 | - | - | 0.013 | <0.001 | 0.002 | - | - | 0.002 |
| | CC | 9 | 13,660 | - | - | 0.004 | - | 0.001 | - | - | 0.001 |
| | SG | 14 | 89,247 | - | - | 0.001 | 0.008 | 0.005 | - | - | 0.004 |
| | SG | 16 | 6,643 | - | - | - | - | - | - | - | - |
| 2004 | CC | 6 | 52,049 | 0.002 | 0.012 | 0.141 | - | 0.001 | - | - | 0.021 |
| | CC | 7 | 107,843 | - | 0.012 | 0.719 | 0.001 | 0.003 | - | 0.001 | 0.107 |
| | CC | 8 | 44,614 | - | - | 0.033 | <0.001 | 0.002 | - | 0.001 | 0.005 |
| | CC | 9 | 17,770 | - | - | 0.004 | <0.001 | 0.001 | - | 0.001 | 0.001 |
| | WCVI | 23 | 33,608 | - | - | - | <0.001 | 0.001 | 0.018 | 0.012 | 0.003 |
| | WCVI | 24 | 32,421 | - | 0.003 | - | <0.001 | - | 0.04 | 0.04 | 0.009 |
| | WCVI | 25 | 38,601 | - | - | - | - | - | 0.011 | 0.003 | 0.001 |
| | WCVI | 26 | 27,181 | - | - | - | 0.002 | 0.001 | 0.073 | 0.077 | 0.017 |
| WYD | WCVI, CC | 8, 25 | 3,259 | - | - | 0.001 | - | - | - | - | <0.001 |
| All | All | | 1,364,729 | 0.413 | 0.736 | 1.122 | 0.04 | 0.022 | 0.141 | 0.137 | 0.271 |

Table 5. Estimates of 2005 CWT removals by assessment region, statistical area and fishing gear. Total catch, catch tonnage searched and the percentage of catch searched are also shown.

| **Recovery** | Region | | | PRD | PRD | CC | SG | SG | WCVI | WCVI | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area | | | 4 | 5 | 7 | 14 | 14 | 25 | 25 | |
| | Gear | | | GN | SN | SN | GN | SN | GN | SN | |
| | Total Catch (mt) | | | 2,049.6 | 1,750.1 | 3,778.4 | 8,953.8 | 7,929.2 | 896.1 | 3,373.0 | 28,730.1 |
| | Catch Searched (mt) | | | 499.0 | 346.5 | 1,136.7 | 2,156.4 | 1,936.0 | 275.8 | 1,398.9 | 7,749.0 |
| | Catch Searched (%) | | | 24.3 | 19.8 | 30.1 | 24.1 | 24.4 | 100.0 | 41.5 | 27.0 |
| **Release** Year | Region | Area | Tags Released | | | | | | | | |
| 1999 | QCI | 2E | 6,175 | - | - | - | - | - | - | - | - |
| | SG | 14 | 23,187 | - | - | - | - | - | - | - | - |
| | SG | 17 | 14,266 | - | - | - | - | - | - | - | - |
| WYD | SG | 14, 17 | 5,815 | - | - | - | - | - | - | - | - |
| BYD | SG | 14, 17 | 7,141 | - | - | - | - | - | - | - | - |
| 2000 | SG | 14 | 180,229 | - | - | - | 21 | - | - | - | 21 |
| | SG | 17 | 58,994 | - | - | - | 4 | - | - | - | 4 |
| WYD | SG | 14, 17 | 6,471 | - | - | - | - | - | - | - | - |
| 2001 | PRD | 4 | 65,809 | 202 | 61 | - | - | - | - | - | 263 |
| | PRD | 5 | 22,387 | 16 | 71 | - | - | - | - | - | 87 |
| | SG | 14 | 60,558 | - | - | 3 | 71 | 33 | - | - | 107 |
| 2002 | PRD | 4 | 48,960 | 490 | 25 | 3 | 4 | - | - | - | 522 |
| | PRD | 5 | 25,701 | 29 | 167 | - | - | - | - | - | 196 |
| | PRD | 5WI | 11,081 | 8 | 30 | 3 | - | - | - | - | 41 |
| | CC | 6 | 18,168 | - | - | 63 | - | - | - | - | 63 |
| | CC | 7 | 31,027 | - | - | 116 | - | 4 | - | - | 120 |
| | CC | 8 | 9,463 | - | - | 10 | 4 | 12 | - | - | 26 |
| | SG | 14 | 83,528 | - | - | 3 | 133 | 12 | - | 2 | 150 |

Table 5 (continued).

| **Recovery** | Region | | | PRD | PRD | CC | SG | SG | WCVI | WCVI | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area | | | 4 | 5 | 7 | 14 | 14 | 25 | 25 | |
| | Gear | | | GN | SN | SN | GN | SN | GN | SN | |
| | Total Catch (mt) | | | 2,049.6 | 1,750.1 | 3,778.4 | 8,953.8 | 7,929.2 | 896.1 | 3,373.0 | 28,730.1 |
| | Catch Searched (mt) | | | 499.0 | 346.5 | 1,136.7 | 2,156.4 | 1,936.0 | 275.8 | 1,398.9 | 7,749.0 |
| | Catch Searched (%) | | | 24.3 | 19.8 | 30.1 | 24.1 | 24.4 | 30.8 | 41.5 | 27.0 |
| **Release** Year | Region | Area | Tags Released | | | | | | | | |
| 2003 | PRD | 3 | 15,066 | 21 | 10 | - | - | - | - | - | 31 |
| | PRD | 5 | 96,434 | 78 | 869 | 17 | 4 | - | - | 5 | 973 |
| | CC | 7 | 79,920 | - | 10 | 565 | 4 | - | - | 2 | 581 |
| | CC | 8 | 27,453 | - | - | 50 | 4 | 12 | - | - | 66 |
| | CC | 9 | 13,660 | - | - | 13 | - | 4 | - | - | 17 |
| | SG | 14 | 89,247 | - | - | 3 | 71 | 41 | - | - | 115 |
| | SG | 16 | 6,643 | - | - | - | - | - | - | - | - |
| 2004 | CC | 6 | 52,049 | 4 | 20 | 532 | - | 4 | - | - | 560 |
| | CC | 7 | 107,843 | - | 20 | 2,716 | 8 | 20 | - | 2 | 2,766 |
| | CC | 8 | 44,614 | - | - | 123 | 4 | 12 | - | 2 | 141 |
| | CC | 9 | 17,770 | - | - | 13 | 4 | 8 | - | 2 | 27 |
| | WCVI | 23 | 33,608 | - | - | - | 4 | 8 | 16 | 41 | 69 |
| | WCVI | 24 | 32,421 | - | 5 | - | 4 | - | 35 | 135 | 179 |
| | WCVI | 25 | 38,601 | - | - | - | - | - | 10 | 10 | 20 |
| | WCVI | 26 | 27,181 | - | - | - | 17 | 4 | 65 | 260 | 346 |
| WYD | WCVI, CC | 8, 25 | 3,259 | - | - | 3 | - | - | - | - | 3 |
| All | All | | 1,364,729 | 846 | 1,288 | 4,238 | 361 | 174 | 126 | 461 | 7,494 |

WI refers to Wilson Inlet release event (southern PRD).

Table 6. Estimates of 2005 CWT removal rates (percentage of the released tag removed) from all roe herring catches by assessment region, statistical area and fish gear. Total catch, catch tonnage and the percentage of catch searched are also shown.

| **Recovery** | Region | | | PRD | PRD | CC | SG | SG | WCVI | WCVI | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area | | | 4 | 5 | 7 | 14 | 14 | 25 | 25 | |
| | Gear | | | GN | SN | SN | GN | SN | GN | SN | |
| | Total Catch (mt) | | | 2,049.6 | 1,750.1 | 3,778.4 | 8,953.8 | 7,929.2 | 896.1 | 3,373.0 | 28,730.1 |
| | Catch Searched (mt) | | | 499.0 | 346.5 | 1,136.7 | 2,156.4 | 1,936.0 | 275.8 | 1,398.9 | 7,749.0 |
| | Catch Searched (%) | | | 24.3 | 19.8 | 30.1 | 24.1 | 24.4 | 100.0 | 41.5 | 27.0 |
| **Release** Year | | Region | Area | Tags Released | | | | | | | |
| 1999 | | QCI | 2E | 6,175 | - | - | - | - | - | - | - |
| | | SG | 14 | 23,187 | - | - | - | - | - | - | - |
| | | SG | 17 | 14,266 | - | - | - | - | - | - | - |
| | WYD | SG | 14, 17 | 5,815 | - | - | - | - | - | - | - |
| | BYD | SG | 14, 17 | 7,141 | - | - | - | - | - | - | - |
| 2000 | | SG | 14 | 180,229 | - | - | - | 0.01 | - | - | 0.01 |
| | | SG | 17 | 58,994 | - | - | - | 0.01 | - | - | 0.01 |
| | WYD | SG | 14, 17 | 6,471 | - | - | - | - | - | - | - |
| 2001 | | PRD | 4 | 65,809 | 0.31 | 0.09 | - | - | - | - | 0.34 |
| | | PRD | 5 | 22,387 | 0.07 | 0.32 | - | - | - | - | 0.30 |
| | | SG | 14 | 60,558 | - | - | 0.01 | 0.12 | 0.05 | - | 0.16 |
| 2002 | | PRD | 4 | 48,960 | 1.00 | 0.05 | 0.01 | 0.01 | - | - | 0.95 |
| | | PRD | 5 | 25,701 | 0.11 | 0.65 | - | - | - | - | 0.58 |
| | | PRD | 5WI | 11,081 | 0.07 | 0.27 | 0.03 | - | - | - | 0.30 |
| | | CC | 6 | 18,168 | - | - | 0.35 | - | - | - | 0.39 |
| | | CC | 7 | 31,027 | - | - | 0.37 | - | 0.01 | - | 0.43 |
| | | CC | 8 | 9,463 | - | - | 0.11 | 0.04 | 0.13 | - | 0.27 |
| | | SG | 14 | 83,528 | - | - | <0.01 | 0.16 | 0.01 | - | <0.01 | 0.16 |

Table 6 (continued).

| **Recovery** | Region | | | PRD | PRD | CC | SG | SG | WCVI | WCVI | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Area | | | 4 | 5 | 7 | 14 | 14 | 25 | 25 | |
| | Gear | | | GN | SN | SN | GN | SN | GN | SN | |
| | Total Catch (mt) | | | 2,049.6 | 1,750.1 | 3,778.4 | 8,953.8 | 7,929.2 | 896.1 | 3,373.0 | 28,730.1 |
| | Catch Searched (mt) | | | 499.0 | 346.5 | 1,136.7 | 2,156.4 | 1,936.0 | 275.8 | 1,398.9 | 7,749.0 |
| | Catch Searched (%) | | | 24.3 | 19.8 | 30.1 | 24.1 | 24.4 | 30.8 | 41.5 | 27.0 |
| **Release** Year | Region | Area | Tags Released | | | | | | | | |
| 2003 | PRD | 3 | 15,066 | 0.14 | 0.07 | - | - | - | - | - | 0.17 |
| | PRD | 5 | 96,434 | 0.08 | 0.90 | 0.02 | <0.01 | - | - | 0.01 | 0.77 |
| | CC | 7 | 79,920 | - | 0.01 | 0.71 | 0.01 | - | - | <0.01 | 0.81 |
| | CC | 8 | 27,453 | - | - | 0.18 | 0.02 | 0.04 | - | - | 0.26 |
| | CC | 9 | 13,660 | - | - | 0.10 | - | 0.03 | - | - | 0.14 |
| | SG | 14 | 89,247 | - | - | <0.01 | 0.08 | 0.05 | - | - | 0.12 |
| | SG | 16 | 6,643 | - | - | - | - | - | - | - | - |
| 2004 | CC | 6 | 52,049 | 0.01 | 0.04 | 1.02 | - | 0.01 | - | - | 1.18 |
| | CC | 7 | 107,843 | - | 0.04 | 5.22 | 0.02 | 0.04 | - | <0.01 | 5.91 |
| | CC | 8 | 44,614 | - | - | 0.28 | 0.01 | 0.03 | - | 0.01 | 0.35 |
| | CC | 9 | 17,770 | - | - | 0.07 | 0.02 | 0.05 | - | 0.01 | 0.21 |
| | WCVI | 23 | 33,608 | - | - | - | 0.01 | 0.02 | 0.01 | 0.12 | 0.29 |
| | WCVI | 24 | 32,421 | - | 0.02 | - | 0.01 | - | 0.03 | 0.42 | 0.79 |
| | WCVI | 25 | 38,601 | - | - | - | - | - | 0.01 | 0.02 | 0.07 |
| | WCVI | 26 | 27,181 | - | - | - | 0.06 | 0.02 | 0.07 | 0.96 | 1.81 |
| WYD | WCVI, CC | 8, 25 | 3,259 | - | - | 0.10 | - | - | - | - | 0.11 |

WI refers to Wilson Inlet release event (southern PRD).

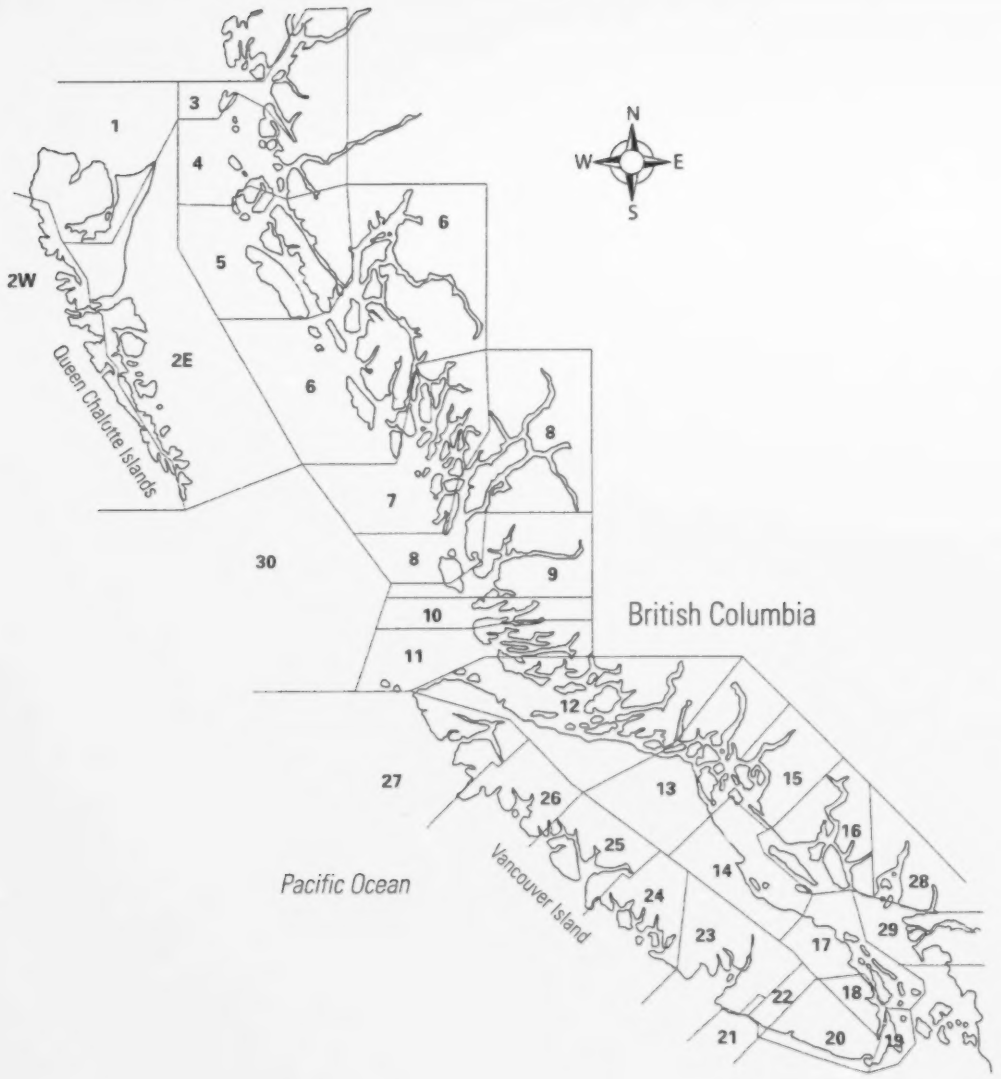


Figure 1. The coast of British Columbia, shown divided into representative inshore fisheries statistical (management) areas.

Appendix A. Summary of 1999 to 2004 herring releases with binary tag code discrepancies and subsequent 2005 tag recoveries.

| Discrepancy Type | Release Year | Tagging Set(s) | Area | Tag Code | Releases | 2005 Recoveries |
|---|---|---|---|---|---|---|
| **Within-year** | 1999 | 13 | 14 | 18-12-13 [a] | 3,310 | 0 |
| | 1999 | 12 | 17 | 18-12-32 | 2,505 | 0 |
| | 2000 | 5 | 14 | 02-13-12 [a] | 3,017 | 0 |
| | 2000 | 25 | 17 | 18-14-43 | 3,454 | 0 |
| | 2000 | 14, 15 | 14 | 18-12-19 [a] | 2,506 | 0 |
| | 2000 | 21 | 14 | 02-12-12 | 9,108 | 0 |
| | 2000 | 11 | 14 | 18-03-34 [a] | 6,356 | 0 |
| | 2000 | 16, 17 | 14 | 18-42-17 | 7,030 | 0 |
| | 2000 | 26, 27 | 17 | 18-34-42 [a] | 511 | 0 |
| | 2000 | 19 | 14 | 18-42-23 | 0 | 0 |
| | 2000 | 13 | 14 | 18-34-35 [a] | 2,024 | 0 |
| | 2000 | 13 | 14 | 18-34-45 | 0 | 0 |
| | 2000 | 27 | 17 | 18-31-11 [a] | 3,312 | 0 |
| | 2000 | 27 | 17 | 18-31-10 | 3,060 | 0 |
| | 2004 | 9 | 25 | 18-45-39 [b] | 3,259 | 1 |
| | 2004 | 12 | 8 | | | |
| | | Total | | 15 codes | 49,452 | 1 |
| **Between-years** | 1999 | 1 | 14 | 18-08-48 [b] | 2,587 | 0 |
| | 2000 | 30 | 17 | | 952 | |
| | 1999 | 3 | 14 | 18-15-63 [b] | 1,857 | 0 |
| | 2000 | 23, 24 | 17 | | 1,745 | |
| | | Total | | 2 codes | 7,141 | 0 |

[a] Tag code mislabelling occurred between codes used within the same year and stock region.
[b] Accidental repeated tag code usage.

Appendix B. Summary of herring CWT releases from 1999 to 2004 by set identification code (year and set number), stock assessment region, statistical area, location, date, code discrepancy (Disc), number of tagged herring released and subsequent 2005 tag recoveries.

| Set Id [a] | Region | Area | Location | Date | Disc[b] | Releases | Recoveries |
|---|---|---|---|---|---|---|---|
| 1999-001 | SG | 14 | Fillongley Park | 02/03/1999 | BYD | 3,539 | |
| 1999-002 | SG | 14 | Whalebone Point | 04/03/1999 | | 3,751 | |
| 1999-003 | SG | 14 | Phipps Point | 04/03/1999 | BYD | 3,602 | |
| 1999-004 | SG | 14 | Bowser | 05/03/1999 | | 3,006 | |
| 1999-005 | SG | 14 | Qualicum Bay | 06/03/1999 | | 3,590 | |
| 1999-006 | SG | 14 | Qualicum Bay | 06/03/1999 | | 3,670 | |
| 1999-007 | SG | 14 | Metcalfe Bay | 07/03/1999 | | 675 | |
| 1999-008 | SG | 14 | Chrome Island | 09/03/1999 | | 1,644 | |
| 1999-009 | SG | 17 | Link Island | 15/03/1999 | | 1,964 | |
| 1999-010 | SG | 17 | Jesse Island | 15/03/1999 | | 3,597 | |
| 1999-011 | SG | 17 | McKay Point | 16/03/1999 | | 3,370 | |
| 1999-012 | SG | 17 | Link Island | 18/03/1999 | | 913 | |
| 1999-012 | SG | 17 | Link Island | 18/03/1999 | WYD | 2,505 | |
| 1999-013 | SG | 14 | French Creek | 18/03/1999 | WYD | 3,310 | |
| 1999-014 | SG | 14 | French Creek | 19/03/1999 | | 3,438 | |
| 1999-015 | SG | 14 | French Creek | 19/03/1999 | | 3,413 | |
| 1999-016 | SG | 17 | Link Island | 20/03/1999 | | 4,422 | |
| 1999-017 | QCI | 02E | Wanderer Island | 26/03/1999 | | 1,141 | |
| 1999-018 | QCI | 02E | Wanderer Island | 27/03/1999 | | 2,002 | |
| 1999-019 | QCI | 02E | Wanderer Island | 28/03/1999 | | 3,032 | |
| | | | | | | | |
| 2000-001 | SG | 14 | Fillongley Park | 26/02/2000 | | 18,963 | 2 |
| 2000-003 | SG | 14 | Fillongley Park | 27/02/2000 | | 13,472 | |
| 2000-004 | SG | 14 | Big Qualicum | 29/02/2000 | | 13,304 | |
| 2000-005 | SG | 14 | Boyle Point | 03/03/2000 | WYD | 6,471 | |
| 2000-005 | SG | 14 | Boyle Point | 03/03/2000 | | 4,809 | 1 |
| 2000-006 | SG | 14 | Boyle Point | 03/03/2000 | | 15,489 | |
| 2000-007 | SG | 14 | Repulse Point | 03/03/2000 | | 13,180 | 1 |
| 2000-009 | SG | 14 | Tribune Bay | 05/03/2000 | | 16,100 | |
| 2000-011 | SG | 14 | Helliwell Park | 06/03/2000 | | 13,386 | 1 |
| 2000-012 | SG | 14 | Qualicum Bay | 06/03/2000 | | 4,750 | |
| 2000-013 | SG | 14 | Parksville Bay | 07/03/2000 | | 7,963 | |
| 2000-014 | SG | 14 | Parksville Bay | 07/03/2000 | | 18,379 | |
| 2000-015 | SG | 14 | Parksville Bay | 07/03/2000 | | 5,936 | |
| 2000-016 | SG | 14 | French Creek | 08/03/2000 | | 2,109 | |
| 2000-017 | SG | 14 | French Creek | 08/03/2000 | | 1,576 | |
| 2000-018 | SG | 14 | French Creek | 08/03/2000 | | 9,662 | |
| 2000-019 | SG | 14 | Longbeak Point | 09/03/2000 | WYD | 511 | |
| 2000-019 | SG | 14 | Longbeak Point | 09/03/2000 | | 10,358 | |
| 2000-020 | SG | 14 | Longbeak Point | 09/03/2000 | | 8,623 | |
| 2000-021 | SG | 14 | Northwest Bay | 11/03/2000 | | 1,659 | |

Appendix B (continued).

| Set Id [a] | Region | Area | Location | Date | Disc[b] | Releases | Recoveries |
|---|---|---|---|---|---|---|---|
| 2000-022 | SG | 17 | Yellow Point | 14/03/2000 | | 8,258 | |
| 2000-023 | SG | 17 | Link Island | 14/03/2000 | | 5,651 | |
| 2000-025 | SG | 17 | Yellow Point | 15/03/2000 | | 3,426 | |
| 2000-026 | SG | 17 | Link Island | 16/03/2000 | | 7,074 | |
| 2000-027 | SG | 17 | Hammond Bay | 20/03/2000 | | 10,035 | |
| 2000-028 | SG | 17 | Mudge Island | 21/03/2000 | | 4,235 | |
| 2000-029 | SG | 17 | Richard Point | 22/03/2000 | | 5,715 | |
| 2000-030 | SG | 17 | Blunden Point | 22/03/2000 | | 4,517 | |
| 2000-031 | SG | 17 | Icarus Point | 23/03/2000 | | 4,430 | 1 |
| 2000-032 | SG | 17 | Schooner Cove | 24/03/2000 | | 5,653 | |
| | | | | | | | |
| 2001-001 | SG | 14 | Bowser | 04/03/2001 | | 8,457 | 4 |
| 2001-003 | SG | 14 | Bowser | 04/03/2001 | | 3,717 | 3 |
| 2001-004 | SG | 14 | Bowser | 05/03/2001 | | 3,113 | |
| 2001-005 | SG | 14 | Cape Lazo | 05/03/2001 | | 7,016 | 9 |
| 2001-006 | SG | 14 | Cape Lazo | 06/03/2001 | | 8,090 | 5 |
| 2001-007 | SG | 14 | Cape Lazo | 06/03/2001 | | 6,486 | 1 |
| 2001-009 | SG | 14 | Lambert Channel | 07/03/2001 | | 9,102 | 2 |
| 2001-012 | SG | 14 | Little Qualicum River | 08/03/2001 | | 7,204 | 1 |
| 2001-013 | SG | 14 | Qualicum Bay | 08/03/2001 | | 2,798 | 1 |
| 2001-016 | SG | 14 | French Creek | 10/03/2001 | | 4,575 | |
| 2001-018 | PRD | 5 | Kitkatla Inlet | 22/03/2001 | | 6,470 | 4 |
| 2001-019 | PRD | 5 | Kitkatla Inlet | 22/03/2001 | | 1,946 | |
| 2001-020 | PRD | 5 | Kitkatla Inlet | 22/03/2001 | | 1,396 | |
| 2001-021 | PRD | 5 | Kitkatla Inlet | 23/03/2001 | | 8,275 | 8 |
| 2001-023 | PRD | 5 | Kitkatla Inlet | 24/03/2001 | | 4,300 | 6 |
| 2001-024 | PRD | 4 | Casey Cove | 28/03/2001 | | 4,170 | 3 |
| 2001-025 | PRD | 4 | Metford Island | 28/03/2001 | | 6,708 | 7 |
| 2001-026 | PRD | 4 | Garden Island | 29/03/2001 | | 7,443 | 11 |
| 2001-027 | PRD | 4 | Garden Island | 30/03/2001 | | 5,338 | 5 |
| 2001-028 | PRD | 4 | Venn Pass | 31/03/2001 | | 6,384 | 5 |
| 2001-029 | PRD | 4 | Venn Pass | 31/03/2001 | | 6,320 | 4 |
| 2001-030 | PRD | 4 | Big Bay | 31/03/2001 | | 6,129 | 7 |
| 2001-031 | PRD | 4 | Venn Pass | 01/04/2001 | | 12,508 | 11 |
| 2001-033 | PRD | 4 | Venn Pass | 02/04/2001 | | 8,839 | 8 |
| 2001-035 | PRD | 4 | Garden Island | 02/04/2001 | | 1,970 | |
| | | | | | | | |
| 2002-001 | SG | 14 | Norris Rock | 05/03/2002 | | 3,908 | 1 |
| 2002-002 | SG | 14 | Gartley Point | 06/03/2002 | | 5,585 | |
| 2002-003 | SG | 14 | Comox Bar | 06/03/2002 | | 4,123 | 4 |
| 2002-004 | SG | 14 | Seal Islets | 08/03/2002 | | 9,088 | 8 |
| 2002-005 | SG | 14 | Longbeak Point | 08/03/2002 | | 7,339 | 3 |
| 2002-006 | SG | 14 | Sandy Island | 11/03/2002 | | 10,345 | 7 |

Appendix B (continued).

| Set Id [a] | Region | Area | Location | Date | Disc[b] | Releases | Recoveries |
|---|---|---|---|---|---|---|---|
| 2002-007 | SG | 14 | Comox Bar | 11/03/2002 | | 2,241 | 3 |
| 2002-008 | SG | 14 | Repulse Point | 15/03/2002 | | 2,695 | 1 |
| 2002-009 | SG | 14 | Gravelly Bay | 15/03/2002 | | 6,950 | 1 |
| 2002-010 | SG | 14 | French Creek | 16/03/2002 | | 4,002 | 1 |
| 2002-011 | SG | 14 | French Creek | 17/03/2002 | | 8,248 | |
| 2002-012 | SG | 14 | Shingle Spit | 17/03/2002 | | 10,738 | 5 |
| 2002-013 | SG | 14 | Comox Bar | 19/03/2002 | | 8,266 | 3 |
| 2002-014 | CC | 8 | Pruth Bay | 20/03/2002 | | 1,771 | 2 |
| 2002-015 | CC | 8 | Pruth Bay | 21/03/2002 | | 7,692 | 5 |
| 2002-016 | CC | 7 | Norman Morrison Bay | 21/03/2002 | | 7,772 | 14 |
| 2002-017 | CC | 7 | Berry Inlet | 22/03/2002 | | 8,359 | 8 |
| 2002-018 | CC | 7 | Lockhart Bay | 22/03/2002 | | 7,161 | 1 |
| 2002-019 | CC | 7 | Spiller Channel | 23/03/2002 | | 7,735 | 13 |
| 2002-020 | CC | 6 | Kitasu Bay | 24/03/2002 | | 9,042 | 6 |
| 2002-021 | CC | 6 | Kitasu Bay | 25/03/2002 | | 9,126 | 13 |
| 2002-022 | PRD | 4 | Swallow Island | 26/03/2002 | | 5,936 | 19 |
| 2002-023 | PRD | 4 | Shattock Point | 27/03/2002 | | 8,186 | 17 |
| 2002-024 | PRD | 4 | Shattock Point | 27/03/2002 | | 6,895 | 25 |
| 2002-025 | PRD | 4 | Shattock Point | 27/03/2002 | | 6,933 | 18 |
| 2002-026 | PRD | 4 | Anchor Shoal | 28/03/2002 | | 8,324 | 14 |
| 2002-027 | PRD | 4 | Simpson Point | 28/03/2002 | | 8,126 | 25 |
| 2002-028 | PRD | 4 | Whitecliff Island | 28/03/2002 | | 4,560 | 8 |
| 2002-029 | PRD | 5 | Robert Island | 31/03/2002 | | 8,119 | 18 |
| 2002-030 | PRD | 5 | Robert Island | 01/04/2002 | | 5,899 | 11 |
| 2002-031 | PRD | 5 | Willis Bay | 01/04/2002 | | 2,651 | 3 |
| 2002-032 | PRD | 5 | Willis Bay | 01/04/2002 | | 7,255 | 6 |
| 2002-033 | PRD | 5 | Willis Bay | 02/04/2002 | | 1,777 | 2 |
| 2002-034 | PRD | 5WI | Wilson Inlet | 02/04/2002 | | 11,081 | 9 |
| | | | | | | | |
| 2003-001 | SG | 16 | Secret Cove | 05/03/2003 | | 6,643 | |
| 2003-002 | SG | 14 | Madrona Point | 07/03/2003 | | 12,701 | 5 |
| 2003-003 | SG | 14 | Madrona Point | 07/03/2003 | | 3,903 | 4 |
| 2003-004 | SG | 14 | Mistaken Island | 10/03/2003 | | 11,433 | 2 |
| 2003-005 | SG | 14 | Brant Point | 11/03/2003 | | 1,203 | 2 |
| 2003-006 | SG | 14 | Brant Point | 11/03/2003 | | 3,907 | |
| 2003-007 | SG | 14 | Baynes Sound | 16/03/2003 | | 11,272 | 3 |
| 2003-008 | SG | 14 | Longbeak Point | 16/03/2003 | | 12,351 | 5 |
| 2003-009 | SG | 14 | Longbeak Point | 16/03/2003 | | 8,337 | 2 |
| 2003-010 | SG | 14 | Chrome Island | 17/03/2003 | | 11,372 | 3 |
| 2003-011 | SG | 14 | Repulse Point | 17/03/2003 | | 12,768 | 2 |
| 2003-012 | CC | 9 | Goose Bay | 20/03/2003 | | 13,660 | 5 |
| 2003-013 | CC | 8 | Storm Inlet | 20/03/2003 | | 15,423 | 10 |
| 2003-014 | CC | 8 | Pruth Bay | 21/03/2003 | | 12,030 | 9 |

Appendix B (continued).

| Set Id [a] | Region | Area | Location | Date | Disc[b] | Releases | Recoveries |
|---|---|---|---|---|---|---|---|
| 2003-015 | CC | 7 | Kildidt Sound | 22/03/2003 | | 9,132 | 14 |
| 2003-016 | CC | 7 | Lockhart Bay | 23/03/2003 | | 13,542 | 36 |
| 2003-017 | CC | 7 | SW Spiller Channel | 23/03/2003 | | 13,594 | 45 |
| 2003-018 | CC | 7 | Neekas Inlet | 24/03/2003 | | 16,394 | 37 |
| 2003-019 | CC | 7 | Berry Inlet | 24/03/2003 | | 11,739 | 23 |
| 2003-020 | CC | 7 | East Higgins Pass | 25/03/2003 | | 15,519 | 20 |
| 2003-021 | PRD | 5 | Gurd Point | 27/03/2003 | | 14,095 | 42 |
| 2003-022 | PRD | 5 | Gurd Island (Nth) | 27/03/2003 | | 14,092 | 32 |
| 2003-023 | PRD | 5 | Dries Inlet | 27/03/2003 | | 9,403 | 29 |
| 2003-024 | PRD | 3 | Cunningham Pass | 31/03/2003 | | 15,066 | 7 |
| 2003-025 | PRD | 5 | Robert Island | 01/04/2003 | | 15,291 | 27 |
| 2003-026 | PRD | 5 | Kitkatla Inlet | 01/04/2003 | | 14,379 | 23 |
| 2003-027 | PRD | 5 | Porcher Peninsula | 02/04/2003 | | 15,465 | 26 |
| 2003-028 | PRD | 5 | Gurd Point | 02/04/2003 | | 13,709 | 20 |
| 2004-001 | WCVI | 23 | SE Spilling Islets | 04/03/2004 | | 10,477 | 6 |
| 2004-002 | WCVI | 23 | Mayne Bay | 06/03/2004 | | 8,401 | 3 |
| 2004-003 | WCVI | 23 | Saint Ines Island | 07/03/2004 | | 14,730 | 17 |
| 2004-004 | WCVI | 24 | Shelter Inlet | 10/03/2004 | | 15,119 | 44 |
| 2004-005 | WCVI | 24 | Shelter Inlet | 11/03/2004 | | 17,302 | 25 |
| 2004-006 | WCVI | 26 | Kyuquot Channel | 13/03/2004 | | 15,717 | 68 |
| 2004-007 | WCVI | 26 | Crowther Channel | 13/03/2004 | | 11,464 | 65 |
| 2004-008 | WCVI | 25 | Rosa Harbour | 15/03/2004 | | 16,576 | 4 |
| 2004-009 | WCVI | 25 | Rosa Harbour | 16/03/2004 | | 2,591 | |
| 2004-009 | WCVI | 25 | Rosa Harbour | 16/03/2004 | WYD | 3,259 | 1 |
| 2004-010 | WCVI | 25 | Rosa Harbour | 17/03/2004 | | 6,078 | 3 |
| 2004-011 | WCVI | 25 | Rosa Harbour | 17/03/2004 | | 13,356 | |
| 2004-012 | CC | 8 | Pruth Bay | 21/03/2004 | | 18,223 | 20 |
| 2004-013 | CC | 8 | Fairmile Passage | 21/03/2004 | | 12,004 | 11 |
| 2004-014 | CC | 8 | Fairmile Passage | 22/03/2004 | | 14,387 | 11 |
| 2004-015 | CC | 6 | Kitasu Bay | 24/03/2004 | | 17,332 | 47 |
| 2004-016 | CC | 6 | Kitasu Bay | 24/03/2004 | | 18,393 | 59 |
| 2004-017 | CC | 6 | Kitasu Bay | 25/03/2004 | | 16,324 | 60 |
| 2004-018 | CC | 7 | Berry Inlet | 25/03/2004 | | 17,011 | 152 |
| 2004-019 | CC | 7 | Berry Inlet | 26/03/2004 | | 19,228 | 163 |
| 2004-020 | CC | 7 | Dundivan Inlet | 27/03/2004 | | 18,417 | 157 |
| 2004-021 | CC | 7 | Tankeeah River | 27/03/2004 | | 13,659 | 137 |
| 2004-022 | CC | 7 | Tankeeah River | 28/03/2004 | | 17,901 | 151 |
| 2004-023 | CC | 7 | East Higgins Pass | 30/03/2004 | | 21,627 | 70 |
| 2004-024 | CC | 9 | Goose Bay | 31/03/2004 | | 17,770 | 10 |
| **Totals** | | | | | | **1,364,729** | **2,102** |

[a] Set Id refers to release year and set number for first use of tag code in cases where multiple use occurred.
[b] Disc indicates which sets had discrepant release information from multiple code use; BYD = between year discrepancies; WYD= within year discrepancies (Appendix A).

Appendix C. Summary of herring CWT 2005 recoveries and recovery rates (RR%) by 2003 and 2004 release stock assessment region, statistical area, location, set identification (year and set number), tagging interval and number of tagged herring released per interval.

| Set Id | Region | Area | Location | Interval | Releases | Recoveries | RR% |
|---|---|---|---|---|---|---|---|
| 2003-001 | SG | 17 | Secret Cove | 1 | 3,821 | 0 | 0.00 |
| | | | | 2 | 2,822 | 0 | 0.00 |
| 2003-002 | SG | 14 | Madrona Point | 1 | 4,282 | 3 | 0.07 |
| | | | | 2 | 4,236 | 1 | 0.02 |
| | | | | 3 | 4,183 | 1 | 0.02 |
| 2003-003 | SG | 14 | Madrona Point | 1 | 3,903 | 4 | 0.10 |
| 2003-004 | SG | 14 | Mistaken Island | 1 | 3,806 | 1 | 0.03 |
| | | | | 2 | 3,711 | 0 | 0.00 |
| | | | | 3 | 3,055 | 1 | 0.03 |
| 2003-005 | SG | 14 | Brant Point | 1 | 1,203 | 2 | 0.17 |
| 2003-006 | SG | 14 | Brant Point | 1 | 3,907 | 0 | 0.00 |
| 2003-007 | SG | 14 | Baynes Sound | 1 | 4,166 | 2 | 0.05 |
| | | | | 2 | 4,083 | 1 | 0.02 |
| | | | | 3 | 3,884 | 0 | 0.00 |
| 2003-008 | SG | 14 | Longbeak Point | 1 | 3,890 | 2 | 0.05 |
| | | | | 2 | 4,375 | 1 | 0.02 |
| | | | | 3 | 4,086 | 2 | 0.05 |
| 2003-009 | SG | 14 | Longbeak Point | 1 | 3,324 | 0 | 0.00 |
| | | | | 2 | 5,013 | 2 | 0.04 |
| 2003-010 | SG | 14 | Chrome Island | 1 | 4,169 | 3 | 0.07 |
| | | | | 2 | 3,352 | 0 | 0.00 |
| | | | | 3 | 3,851 | 0 | 0.00 |
| 2003-011 | SG | 14 | Repulse Point | 1 | 4,237 | 1 | 0.02 |
| | | | | 2 | 4,281 | 1 | 0.02 |
| | | | | 3 | 4,250 | 0 | 0.00 |
| 2003-012 | CC | 9 | Goose Bay | 1 | 4,139 | 2 | 0.05 |
| | | | | 2 | 3,809 | 2 | 0.05 |
| | | | | 3 | 3,822 | 1 | 0.03 |
| | | | | 4 | 1,890 | 0 | 0.00 |
| 2003-013 | CC | 8 | Storm Inlet | 1 | 3,916 | 2 | 0.05 |
| | | | | 2 | 4,393 | 2 | 0.05 |
| | | | | 3 | 4,338 | 3 | 0.07 |
| | | | | 4 | 2,776 | 3 | 0.11 |
| 2003-014 | CC | 8 | Pruth Bay | 1 | 3,667 | 4 | 0.11 |
| | | | | 2 | 3,722 | 3 | 0.08 |
| | | | | 3 | 4,641 | 2 | 0.04 |

Appendix C (continued).

| Set Id | Region | Area | Location | Interval | Releases | Recoveries | RR% |
|---|---|---|---|---|---|---|---|
| 2003-015 | CC | 7 | Kildidt Sound | 1 | 3,654 | 6 | 0.16 |
| | | | | 2 | 4,021 | 8 | 0.20 |
| 2003-016 | CC | 7 | Lockhart Bay | 1 | 3,866 | 14 | 0.36 |
| | | | | 2 | 4,163 | 8 | 0.19 |
| | | | | 3 | 4,309 | 12 | 0.28 |
| | | | | 4 | 2,661 | 6 | 0.23 |
| 2003-017 | CC | 7 | SW Spiller Channel | 1 | 3,972 | 14 | 0.35 |
| | | | | 2 | 5,347 | 16 | 0.30 |
| | | | | 3 | 4,275 | 15 | 0.35 |
| 2003-018 | CC | 7 | Neekas Inlet | 1 | 5,687 | 20 | 0.35 |
| | | | | 2 | 5,433 | 6 | 0.11 |
| | | | | 3 | 4,043 | 8 | 0.20 |
| | | | | 4 | 1,231 | 3 | 0.24 |
| 2003-019 | CC | 7 | Berry Inlet | 1 | 4,128 | 13 | 0.31 |
| | | | | 2 | 5,141 | 7 | 0.14 |
| | | | | 3 | 2,470 | 3 | 0.12 |
| 2003-020 | CC | 7 | East Higgins Pass | 1 | 4,786 | 4 | 0.08 |
| | | | | 2 | 5,049 | 6 | 0.12 |
| | | | | 3 | 3,874 | 5 | 0.13 |
| | | | | 4 | 1,810 | 5 | 0.28 |
| 2003-021 | PRD | 5 | Gurd Point | 1 | 4,062 | 14 | 0.34 |
| | | | | 2 | 6,194 | 15 | 0.24 |
| | | | | 3 | 3,839 | 13 | 0.34 |
| 2003-022 | PRD | 5 | Gurd Point | 1 | 4,389 | 11 | 0.25 |
| | | | | 2 | 6,184 | 15 | 0.24 |
| | | | | 3 | 3,519 | 6 | 0.17 |
| 2003-023 | PRD | 5 | Dries Inlet | 1 | 4,859 | 20 | 0.41 |
| | | | | 2 | 4,544 | 9 | 0.20 |
| 2003-024 | PRD | 3 | Hook Point | 1 | 4,400 | 1 | 0.02 |
| | | | | 2 | 6,727 | 3 | 0.04 |
| | | | | 3 | 3,939 | 3 | 0.08 |
| 2003-025 | PRD | 5 | Robert Island | 1 | 4,614 | 17 | 0.37 |
| | | | | 2 | 6,624 | 5 | 0.08 |
| | | | | 3 | 4,053 | 5 | 0.12 |
| 2003-026 | PRD | 5 | Kitkatla Inlet | 1 | 4,755 | 9 | 0.19 |
| | | | | 2 | 6,222 | 8 | 0.13 |
| | | | | 3 | 3,402 | 6 | 0.18 |

Appendix C (continued).

| Set Id | Region | Area | Location | Interval | Releases | Recoveries | RR% |
|---|---|---|---|---|---|---|---|
| 2003-027 | PRD | 5 | Porcher Peninsula | 1 | 4,621 | 8 | 0.17 |
| | | | | 2 | 6,310 | 13 | 0.21 |
| | | | | 3 | 4,534 | 5 | 0.11 |
| 2003-028 | PRD | 5 | Gurd Point | 1 | 4,787 | 8 | 0.17 |
| | | | | 2 | 6,569 | 9 | 0.14 |
| | | | | 3 | 2,353 | 3 | 0.13 |
| 2004-001 | WCVI | 23 | SE Spilling Islets | 1 | 3,585 | 4 | 0.11 |
| | | | | 2 | 3,465 | 1 | 0.03 |
| | | | | 3 | 3,427 | 1 | 0.03 |
| 2004-002 | WCVI | 23 | Lyall Point | 1 | 3,954 | 1 | 0.03 |
| | | | | 2 | 4,447 | 2 | 0.04 |
| 2004-003 | WCVI | 23 | Saint Ines Island | 1 | 4,045 | 4 | 0.10 |
| | | | | 2 | 4,832 | 7 | 0.14 |
| | | | | 3 | 5,034 | 5 | 0.10 |
| | | | | 4 | 819 | 1 | 0.12 |
| 2004-004 | WCVI | 24 | Steamer Cove | 1 | 4,505 | 19 | 0.42 |
| | | | | 2 | 4,805 | 14 | 0.29 |
| | | | | 3 | 4,015 | 7 | 0.17 |
| | | | | 4 | 1,794 | 4 | 0.22 |
| 2004-005 | WCVI | 24 | Clio Island | 1 | 4,143 | 11 | 0.27 |
| | | | | 2 | 6,064 | 11 | 0.18 |
| | | | | 3 | 4,176 | 2 | 0.05 |
| | | | | 4 | 2,919 | 1 | 0.03 |
| 2004-006 | WCVI | 26 | Kyuquot Channel | 1 | 4,234 | 22 | 0.52 |
| | | | | 2 | 6,251 | 30 | 0.48 |
| | | | | 3 | 5,232 | 16 | 0.31 |
| 2004-007 | WCVI | 26 | Crowther Channel | 1 | 4,750 | 26 | 0.55 |
| | | | | 2 | 6,714 | 39 | 0.58 |
| 2004-008 | WCVI | 25 | Rosa Harbour | 1 | 4,756 | 4 | 0.08 |
| | | | | 2 | 4,391 | 0 | 0.00 |
| | | | | 3 | 4,570 | 0 | 0.00 |
| | | | | 4 | 2,859 | 0 | 0.00 |
| 2004-009 | WCVI | 25 | Rosa Harbour | 1 | 5,424 | 2 | 0.04 |
| 2004-010 | WCVI | 25 | Rosa Harbour | 1 | 6,078 | 3 | 0.05 |
| 2004-011 | WCVI | 25 | Rosa Harbour | 1 | 4,911 | 0 | 0.00 |
| | | | | 2 | 4,545 | 0 | 0.00 |
| | | | | 3 | 3,900 | 0 | 0.00 |

Appendix C (continued).

| Set Id | Region | Area | Location | Interval | Releases | Recoveries | RR% |
|---|---|---|---|---|---|---|---|
| 2004-012 | CC | 8 | Pruth Bay | 1 | 4,297 | 11 | 0.26 |
| | | | | 2 | 5,106 | 4 | 0.08 |
| | | | | 3 | 5,647 | 2 | 0.04 |
| | | | | 4 | 4,025 | 4 | 0.10 |
| 2004-013 | CC | 8 | Fairmile Passage | 1 | 5,768 | 6 | 0.10 |
| | | | | 2 | 4,808 | 2 | 0.04 |
| | | | | 3 | 1,428 | 3 | 0.21 |
| 2004-014 | CC | 8 | Fairmile Passage | 1 | 5,171 | 5 | 0.10 |
| | | | | 2 | 5,975 | 5 | 0.08 |
| | | | | 3 | 3,241 | 1 | 0.03 |
| 2004-015 | CC | 6 | Kitasu Bay | 1 | 4,226 | 16 | 0.38 |
| | | | | 2 | 5,342 | 14 | 0.26 |
| | | | | 3 | 4,034 | 5 | 0.12 |
| | | | | 4 | 3,730 | 12 | 0.32 |
| 2004-016 | CC | 6 | Kitasu Bay | 1 | 5,119 | 17 | 0.33 |
| | | | | 2 | 5,953 | 21 | 0.35 |
| | | | | 3 | 5,010 | 11 | 0.22 |
| | | | | 4 | 2,311 | 10 | 0.43 |
| 2004-017 | CC | 6 | Kitasu Bay | 1 | 6,068 | 17 | 0.28 |
| | | | | 2 | 4,245 | 12 | 0.28 |
| | | | | 3 | 6,011 | 31 | 0.52 |
| 2004-018 | CC | 7 | Berry Inlet | 1 | 4,581 | 41 | 0.90 |
| | | | | 2 | 6,646 | 68 | 1.02 |
| | | | | 3 | 4,091 | 32 | 0.78 |
| | | | | 4 | 1,693 | 11 | 0.65 |
| 2004-019 | CC | 7 | Berry Inlet | 1 | 5,439 | 41 | 0.75 |
| | | | | 2 | 3,594 | 39 | 1.09 |
| | | | | 3 | 4,987 | 42 | 0.84 |
| | | | | 4 | 5,208 | 41 | 0.79 |
| 2004-020 | CC | 7 | Dundivan Inlet | 1 | 6,327 | 59 | 0.93 |
| | | | | 2 | 6,165 | 53 | 0.86 |
| | | | | 3 | 5,925 | 45 | 0.76 |
| 2004-021 | CC | 7 | Tankeeah River | 1 | 5,193 | 61 | 1.17 |
| | | | | 2 | 4,295 | 38 | 0.88 |
| | | | | 3 | 4,171 | 38 | 0.91 |
| 2004-022 | CC | 7 | Tankeeah River | 1 | 4,731 | 46 | 0.97 |
| | | | | 2 | 6,630 | 58 | 0.87 |
| | | | | 3 | 3,092 | 22 | 0.71 |
| | | | | 4 | 3,448 | 25 | 0.73 |

Appendix C (continued).

| Set Id | Region | Area | Location | Interval | Releases | Recoveries | RR% |
|---|---|---|---|---|---|---|---|
| 2004-023 | CC | 7 | East Higgins Pass | 1 | 4,458 | 18 | 0.40 |
| | | | | 2 | 6,022 | 22 | 0.37 |
| | | | | 3 | 5,645 | 15 | 0.27 |
| | | | | 4 | 5,502 | 15 | 0.27 |
| 2004-024 | CC | 9 | Goose Bay | 1 | 5,675 | 5 | 0.09 |
| | | | | 2 | 4,240 | 2 | 0.05 |
| | | | | 3 | 5,576 | 1 | 0.02 |
| | | | | 4 | 2,279 | 2 | 0.09 |
| **Totals** | | | | | **686,195** | **1,723** | **0.25** |

Appendix D Summary of herring CWT 2004 in-season recoveries and recovery rates (RR%) by release stock assessment region, statistical area, location, set identification (year and set number), tagging interval and number of tagged herring released per interval. These data should have been included in Appendix D of Flostrand and Schweigert (2005).

| Set Id | Region | Area | Location | Interval | Releases | Recoveries | RR% |
|---|---|---|---|---|---|---|---|
| 2004-006 | WCVI | 26 | Kyuquot Channel | 1 | 4,234 | 3 | 0.07 |
| | | | | 2 | 6,251 | 1 | 0.02 |
| | | | | 3 | 5,232 | 1 | 0.02 |
| 2004-008 | WCVI | 25 | Rosa Harbour | 1 | 4,756 | 6 | 0.13 |
| | | | | 2 | 4,391 | 6 | 0.14 |
| | | | | 3 | 4,570 | 2 | 0.04 |
| | | | | 4 | 2,859 | 1 | 0.03 |
| **Totals** | | | | | **37,732** | **20** | **0.06** |